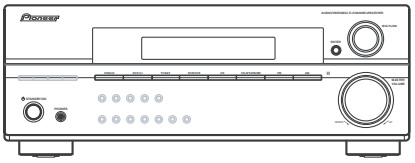
Pioneer sound.vision.soul

# Service Manual



VSX-515-K

ORDER NO.
**RRV3092**

## AUDIO/VIDEO MULTI-CHANNEL RECEIVER

# VSX-515-K
# VSX-515-S

### THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

| Model | Type | Power Requirement | Remarks |
|---|---|---|---|
| VSX-515-K | KUCXJ | AC 120V | |
| VSX-515-S | KUCXJ | AC 120V | |

For details, refer to "Important Check Points for Good Servicing".

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ⓒ**PIONEER CORPORATION 2005**

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# SAFETY INFORMATION

**This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.**

**Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

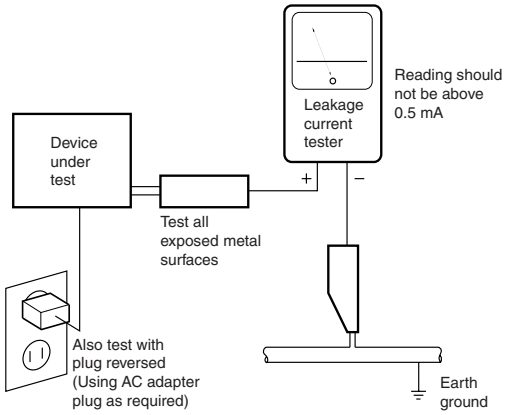
## (FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Leakage current tester
Reading should not be above 0.5 mA
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

**ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.**

### 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

## [Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

### 1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

### 2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

### 3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

### 4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

### 5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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# 1. SPECIFICATIONS

### Amplifier section

- **Continuous power output (stereo)**

Front . . 110 W (20–20,000 Hz, THD 0.7%, 8 Ω) [1]

- **Continuous power output (surround)**

Front. . . . . .110 W per channel (1kHz, 1.0%, 8 Ω)
Center . . . . . .110 W (1kHz, 1.0%, 8 Ω)
Surround . . . . . 110 W per channel (1kHz, 1.0%, 8 Ω)
Surround Back . . . . . .110 W (1kHz, 1.0%, 8 Ω)

### Audio section

- **Input (Sensitivity/Impedance)**

CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT . . . . . 200 mV/47 kΩ

- **Frequency response**

CD, DVR/VCR, CD-R/TAPE/MD, DVD/LD,
TV/SAT . . . . . 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB

- **Output (Level/Impedance)**

DVR/VCR REC, CD-R/TAPE/
MD REC. . . . . .200 mV/2.2 kΩ

- **Tone control**

Bass. . . . . .± 6 dB (100 Hz)
Treble. . . . . .± 6 dB (10 kHz)
Loudness. . . . . +10 dB/+5 dB (100 Hz/10 kHz)
(at volume level –50 dB)

- **Signal-to-Noise Ratio (IHF, short circuited, A network)**

CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT. . . . . .96 dB

- **Signal-to Noise Ratio [EIA, at 1 W (1 kHz)]**

CD, DVR/VCR, CD-R/TAPE/MD,
DVD/LD, TV/SAT. . . . . .79 dB

### Video Section

- **Input (Sensitivity/Impedance)**

DVR/VCR, DVD/LD, TV/SAT. . . . . .1 Vp-p/75 Ω

- **Output (Level/Impedance)**

DVR/VCR, MONITOR OUT. . . . . .1 Vp-p/75 Ω

- **Frequency response**

DVR/VCR, DVD/LD,
TV/SAT ⇨ MONITOR. . . . . .5 Hz to 7 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio. . . . . .55 dB
Crosstalk. . . . . 50dB

### Component video section

- **Input (Sensitivity)**

DVD/LD, TV/SAT. . . . . .1 Vp-p/75 Ω

- **Output (Level/Impedance)**

MONITOR OUT. . . . . .1 Vp-p/75 Ω

- **Frequency response**

DVD/LD,
TV/SAT ⇨ MONITOR. . . . . .5 Hz to 40 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio. . . . . .60 dB

**Note**

1 Continuous average power output of 110 watts* per channel, min., at 8ohms, from 20 Hz to 20,000 Hz with no more than 0.7%** total harmonic distortion (front).
* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.
** Measured by Audio Spectrum Analyzer.

- **FM Tuner Section**

Frequency Range. . . . . .87.5 MHz to 108 MHz
Usable Sensitivity . . . . . Mono:13.2 dBf, IHF (1.3 µV/ 75 Ω)
50 dB Quieting Sensitivity. . . . . Mono: 20.2 dB
Stereo: 38.6 dBf
Signal-to-Noise Ratio. . . Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion . . . . . Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity. . . . . .60 dB (400 kHz)
Stereo Separation . . . . . 40 dB (1 kHz)
Frequency Response. . . . . .30 Hz to 15 kHz (±1 dB)
Antenna Input (DIN) . . . . . 75 Ω unbalanced

### AM Tuner Section

Frequency Range. . . . . 530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna). . . . . .350 µV/m
Signal-to-Noise Ratio. . . . . .50 dB
Antenna . . . . . .Loop antenna

### Miscellaneous

Power requirements . . . . . .AC 120V / 60Hz
Power consumption . . . . . .300 W / 420 VA
In standby . . . . . 0.5 W
Dimensions. . . . $16\frac{9}{16}$ (W) x $6\frac{1}{4}$ (H) x $15\frac{7}{8}$ (D) in.
420 (W) x 158 (H) x 402.5 (D) mm
Weight (without package) . . . . . 21.1 lb (9.9 kg)

### Furnished Parts

AM loop antenna . . . . . 1
FM wire antenna . . . . . 1
Dry cell batteries (AA size IEC R6) . . . . . 2
Remote control . . . . . 1
Warranty Card . . . . . 1
Operating instructions. . . . . 1

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"DTS" ,"DTS-ES Extended Surround" and "Neo:6" are trademarks of Digital Theater Systems, Inc.

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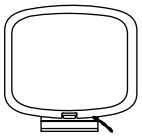
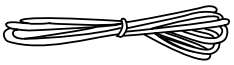
## Accessories

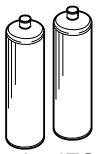
Remote control unit
(XXD3090)



AM loop antenna
(ATB7013)



FM wire antenna
(ADH7030)

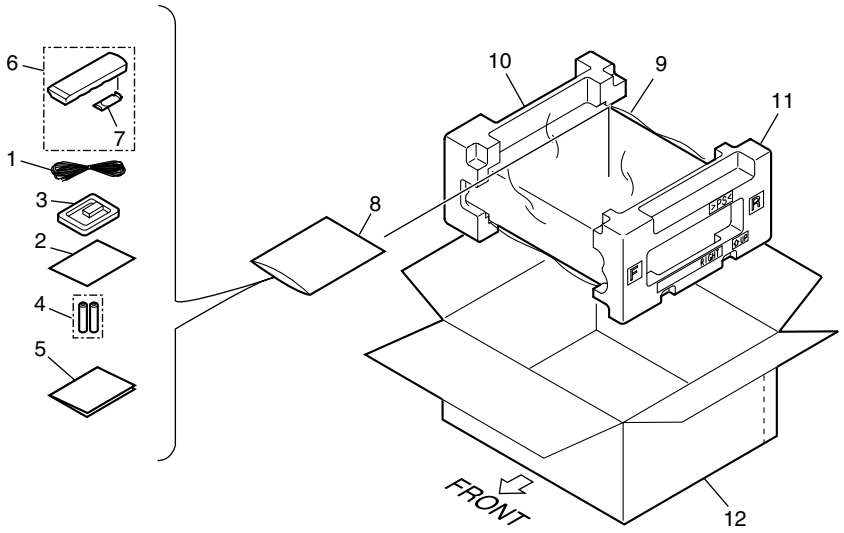


AA size IEC R6
Dry cell batteries (x2)

# 2. EXPLODED VIEWS AND PARTS LIST

*NOTES:*
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

## 2.1 PACKING




### PACKING PARTS LIST

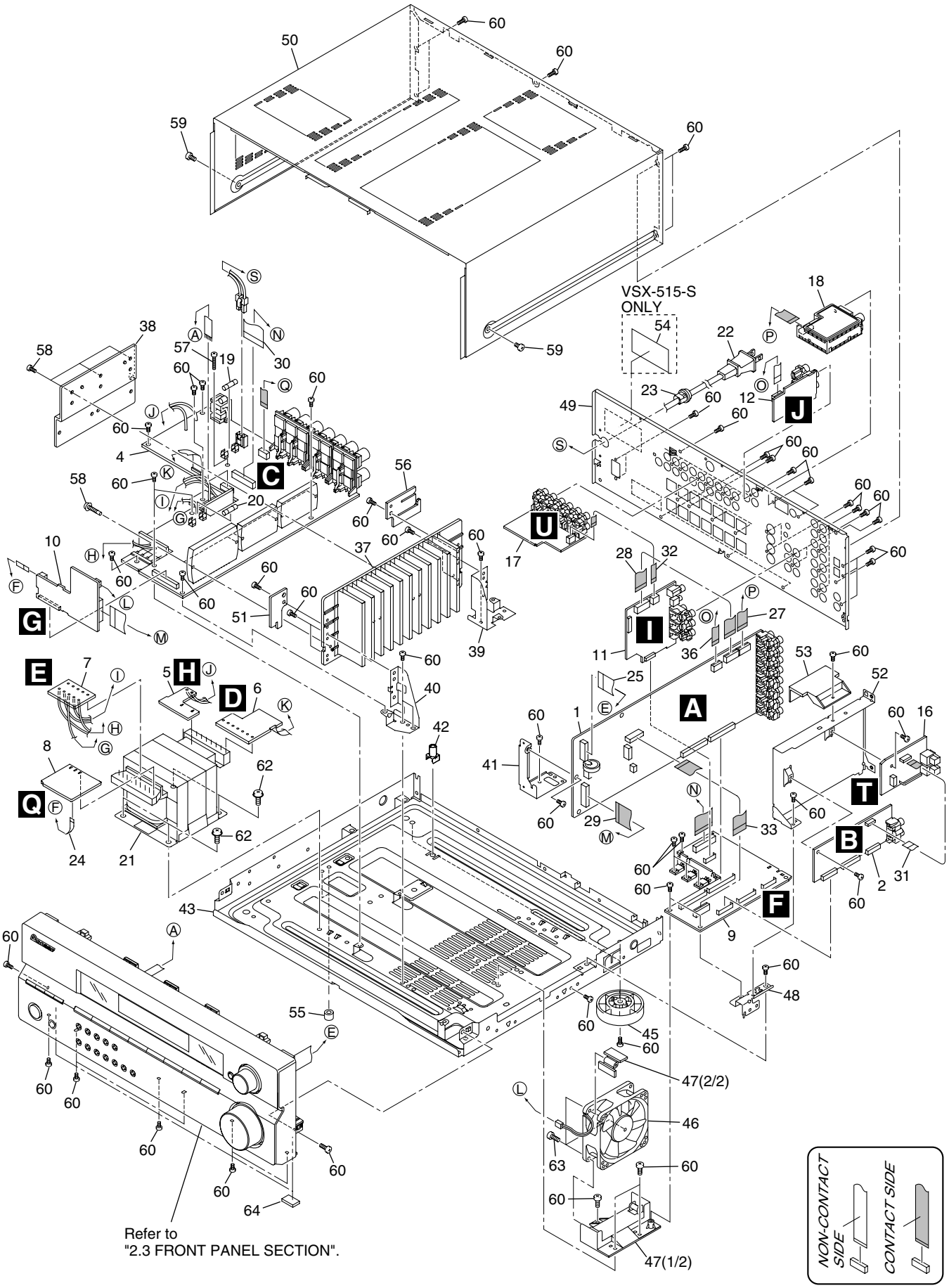
| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | FM wire antenna | ADH7030 |
| NSP | 2 | Warranty Card | ARY7045 |
| | 3 | AM loop antenna | ATB7013 |
| NSP | 4 | Alkaline Dry cell batteries (AA/LR6) | VEM1031 |
| | 5 | Operating instructions (English) | XRE3090 |
| | 6 | Remote Control Unit | XXD3090 |
| | 7 | Battery Cover | XZN3139 |
| NSP | 8 | Literature Bag | AHG1180 |
| | 9 | Packing Sheet | AHG7069 |
| | 10 | Left Pad V2 | XHA3149 |
| | 11 | Right Pad V2 | XHA3150 |
| | 12 | Packing Case | See Contrast table(2) |

### (2) CONTRAST TABLE

VSX-515-K/KUCXJ and VSX-515-S/KUXCJ are constructed the same except for the following:

| Mark | NO | Description | VSX-515-K /KUCXJ | VSX-515-S /KUCXJ |
|---|---|---|---|---|
| | 12 | Packing Case | XHD3474 | XHD3475 |

# 2.2 EXTERIOR SECTION



## EXTERIOR SECTION parts List

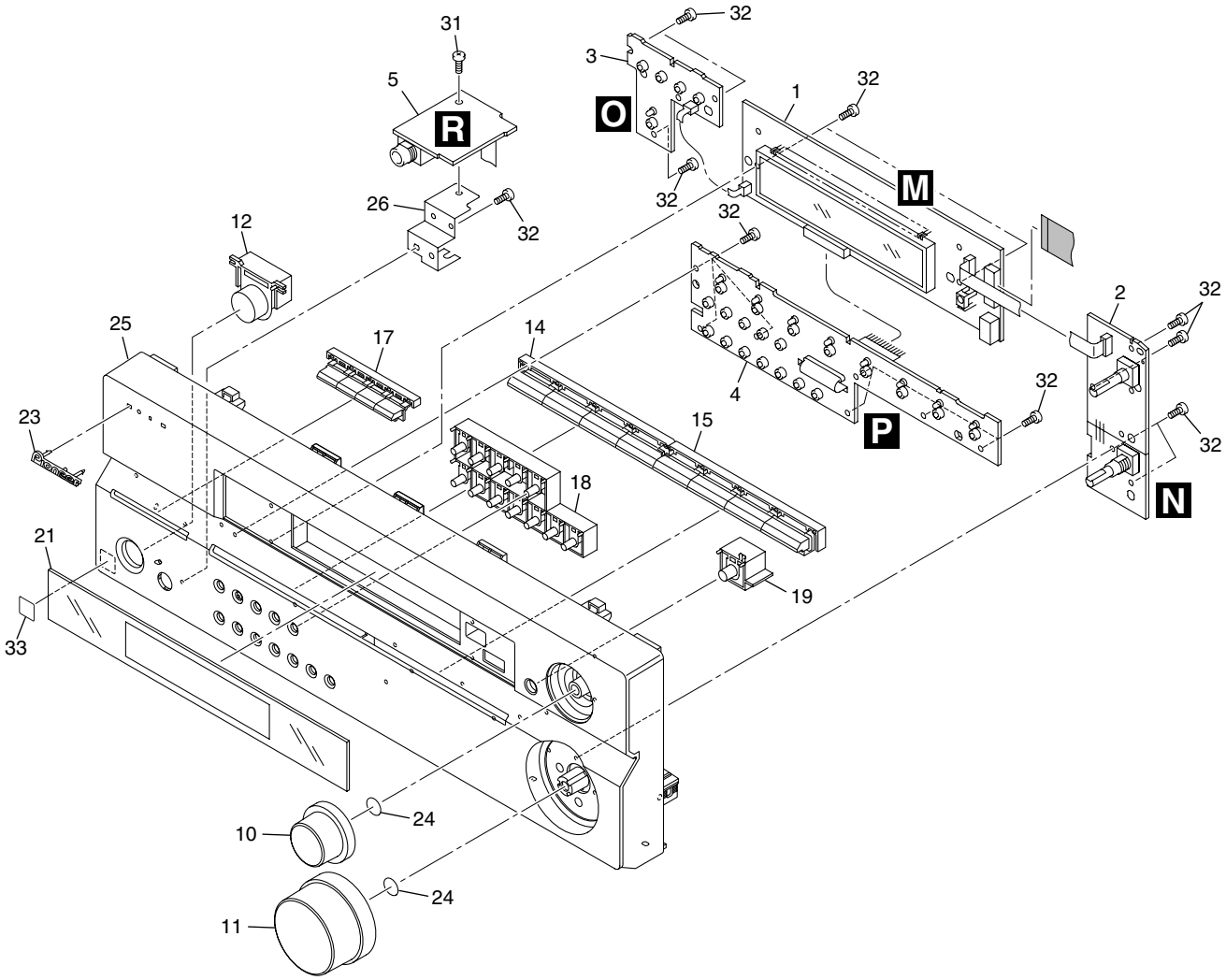
| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | MAIN Assy | XWK3154 |
| | 2 | DSP Assy | AWX8573 |
| | 3 | •••••• | |
| | 4 | AMP & PRIMARY Assy | XWZ3941 |
| | 5 | TRANS1 Assy | XWZ3958 |
| | 6 | TRANS2 Assy | XWZ3959 |
| | 7 | TRANS3 Assy | XWZ3961 |
| | 8 | TRANS4 Assy | XWZ3936 |
| | 9 | REGULATOR Assy | XWZ3952 |
| | 10 | AMP INPUT Assy | XWZ3955 |
| | 11 | VIDEO Assy | XWZ3904 |
| | 12 | 5.1CH INPUT Assy | XWZ3915 |
| | 13 | •••••• | |
| | 14 | •••••• | |
| | 15 | •••••• | |
| | 16 | DIGITAL INPUT Assy | XWZ3927 |
| | 17 | COMPONENT VIDEO Assy | XWZ3934 |
| | 18 | FM/AM TUNER UNIT | AXX7172 |
| ⚠ | 19 | FU1 Fuse (10A) | REK1087 |
| ⚠ | 20 | FU701 Fuse (10A) | REK1087 |
| ⚠ | 21 | Transformer 815KU | XTS3087 |
| ⚠ | 22 | AC Power Cord | ADG7024 |
| | 23 | Cord Stopper | CM-22C |
| | 24 | J22 3P F.F.C/30V | XDD3107 |
| | 25 | J31 17P F.F.C/30V | XDD3118 |
| | 26 | •••••• | |
| | 27 | J33 13P F.F.C/30V | XDD3164 |
| | 28 | J34 11P F.F.C/30V | XDD3163 |
| | 29 | J35 21P F.F.C/30V | XDD3160 |
| | 30 | J36 23P F.F.C/60V | XDD3167 |
| | 31 | J37 10P F.F.C/30V | XDD3178 |
| | 32 | J38 5P F.F.C/60V | XDD3166 |
| | 33 | J43 15P F.F.C/60V | XDD3162 |
| | 34 | •••••• | |
| | 35 | •••••• | |
| | 36 | J48 8P F.F.C/60V | XDD3165 |
| NSP | 37 | Heatsink V2B39 CORR | XNH3034 |
| NSP | 38 | Sub Heatsink | XNH3039 |
| | 39 | H/S Angle Rear V2 | XNG3133 |
| | 40 | H/S Angle Front V2 | XNG3132 |
| | 41 | PCB Angle R5 | XNG3073 |
| | 42 | PCB Mold | AMR2533 |
| NSP | 43 | Under Base V2 | XNA3023 |
| | 44 | •••••• | |
| | 45 | Insulator | AMR7198 |
| ⚠ | 46 | DC Fan Motor | XXM3007 |
| | 47 | Fan Holder R6 | XMR3066 |
| | 48 | REG Support R6 | XNG3093 |
| | 49 | Rear Panel 515S/KU | XNC3326 |
| | 50 | Bonnet | See Contrast table(2) |
| | 51 | HOLDER Assy | XWZ3964 |
| | 52 | Shield V2 | XNG3134 |
| | 53 | FFC Cover V2 | XMR3091 |
| NSP | 54 | N Label | See Contrast table(2) |
| NSP | 55 | Spacer | AEB7092 |
| | 56 | BINDER Assy | XWZ3963 |
| | 57 | Screw | BBZ30P200FTC |
| | 58 | Screw 3x23 | XBA3012 |
| | 59 | Screw | See Contrast table(2) |
| | 60 | Screw | BBZ30P080FTC |
| | 61 | •••••• | |
| | 62 | Screw | FBT40P080FNI |
| | 63 | Screw | BPZ30P120FTC |
| | 64 | Rubber Sheet | AEB1111 |

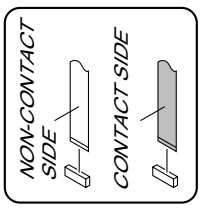
### (2) CONTRAST TABLE

VSX-515-K/KUCXJ and VSX-515-S/KUCXJ are constructed the same except for the following:

| Mark | NO | Description | VSX-515-K /KUCXJ | VSX-515-S /KUCXJ |
|---|---|---|---|---|
| | 50 | Bonnet K V1 | XZN3148 | Not used |
| | 50 | Bonnet S V1 | Not used | XZN3149 |
| NSP | 54 | N Label 515S/KU | Not used | XAL3214 |
| | 59 | Screw | FBT40P080FTB | FBT40P080FNI |

# 2.3 FRONT PANEL SECTION



## FRONT PANEL SECTION parts List

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | FRONT DISPLAY ASSY | XWZ3909 |
| | 2 | R. ENCODER Assy | XWZ3921 |
| | 3 | POWER SW Assy | XWZ3918 |
| | 4 | FRONT KEY Assy | XWZ3913 |
| | 5 | H.P. Assy | XWZ3924 |
| | 6 | •••••• | |
| | 7 | •••••• | |
| | 8 | •••••• | |
| | 9 | •••••• | |
| | 10 | JOG Knob | See Contrast table(2) |
| | 11 | VOL Knob | See Contrast table(2) |
| | 12 | Standby BTN 515K | See Contrast table(2) |
| | 13 | •••••• | |
| | 14 | FUNC BTN L | See Contrast table(2) |
| | 15 | FUNC BTN R | See Contrast table(2) |
| | 16 | •••••• | |
| | 17 | TUNER BTN | See Contrast table(2) |
| | 18 | Sub BTN | See Contrast table(2) |
| | 19 | JOG BUTTON | See Contrast table(2) |
| | 20 | •••••• | |
| | 21 | D Panel 415 B | XAK3480 |
| | 22 | •••••• | |
| | 23 | Pioneer Badge B | See Contrast table(2) |
| NSP | 24 | C Ring DIM 8.1 | XBH3016 |
| | 25 | FRT Panel | See Contrast table(2) |
| | 26 | Earth Plate HP V2 | XNG3131 |
| | 27 | •••••• | |
| | 28 | •••••• | |
| | 29 | •••••• | |
| | 30 | •••••• | |
| | 31 | Screw | BBZ30P080FTC |
| | 32 | Screw | BPZ30P100FTC |
| NSP | 33 | Energy Star label | AAX8022 |

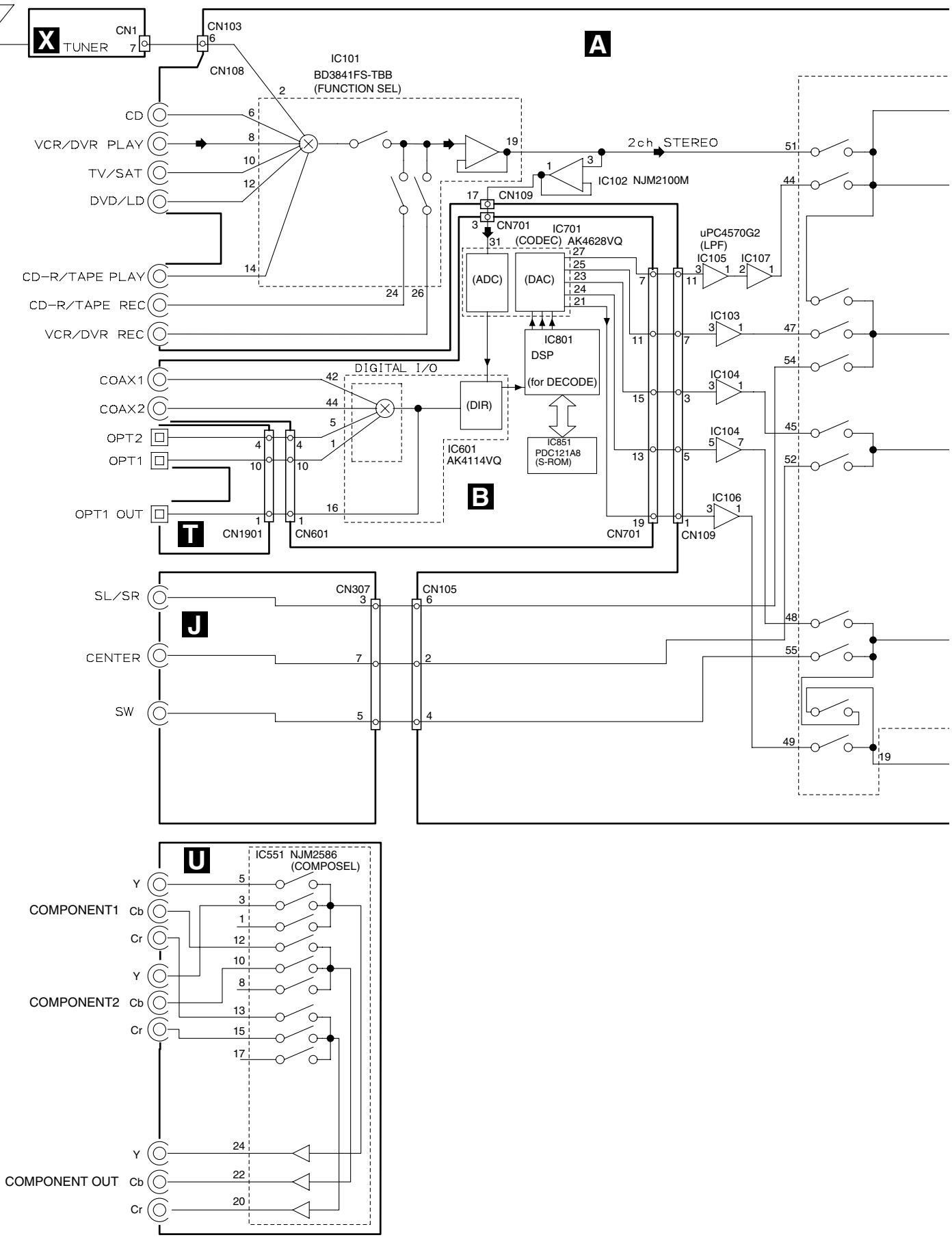
### (2) CONTRAST TABLE

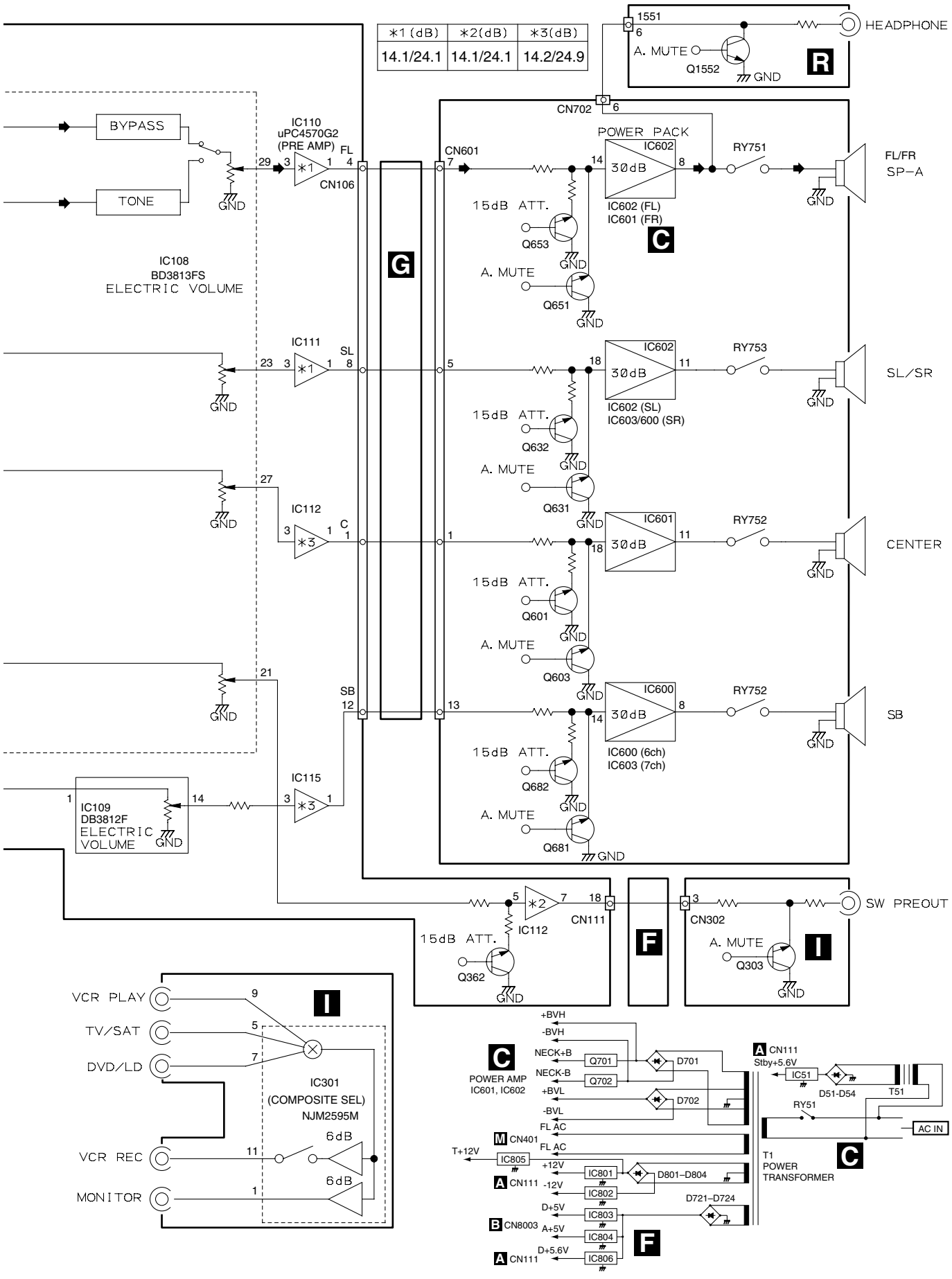
VSX-515-K/KUCXJ and VSX-515-S/KUCXJ are constructed the same except for the following:

| Mark | NO | Description | VSX-515-K /KUCXJ | VSX-515-S /KUCXJ |
|---|---|---|---|---|
| | 10 | JOG Knob V1K | XAB3038 | Not used |
| | 10 | JOG Knob V1S | Not used | XAB3042 |
| | 11 | VOL Knob V1K | XAB3039 | Not used |
| | 11 | VOL Knob V1S | Not used | XAB3043 |
| | 12 | Standby BTN 515K | XAD3202 | Not used |
| | 12 | Standby BTN 515S | Not used | XAD3203 |
| | 14 | FUNC BTN 515K L | XAD3206 | Not used |
| | 14 | FUNC BTN 515S L | Not used | XAD3210 |
| | 15 | FUNC BTN 515K R | XAD3207 | Not used |
| | 15 | FUNC BTN 515S R | Not used | XAD3211 |
| | 17 | TUNER BTN V2K | XAD3192 | Not used |
| | 17 | TUNER BTN V2S | Not used | XAD3193 |
| | 18 | Sub BTN V2K | XAD3198 | Not used |
| | 18 | Sub BTN V2S | Not used | XAD3199 |
| | 19 | JOG BTN V2K | XAD3204 | Not used |
| | 19 | JOG BTN V2S | Not used | XAD3205 |
| | 23 | Pioneer Badge B | XAM3006 | VAM1129 |
| | 25 | FRT Panel 515K/KU | XMB3177 | Not used |
| | 25 | FRT Panel 515S/KU | Not used | XMB3178 |

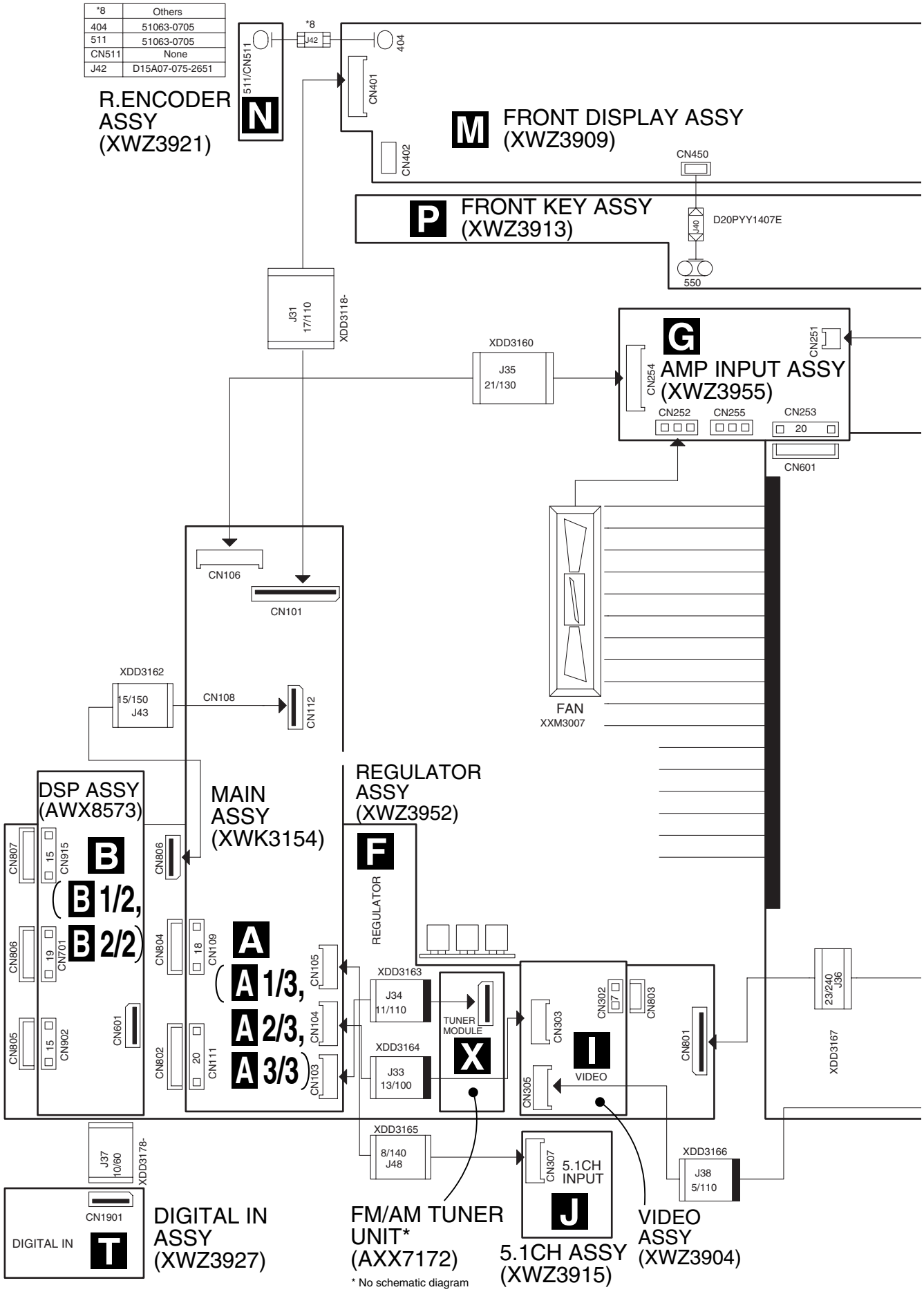
# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

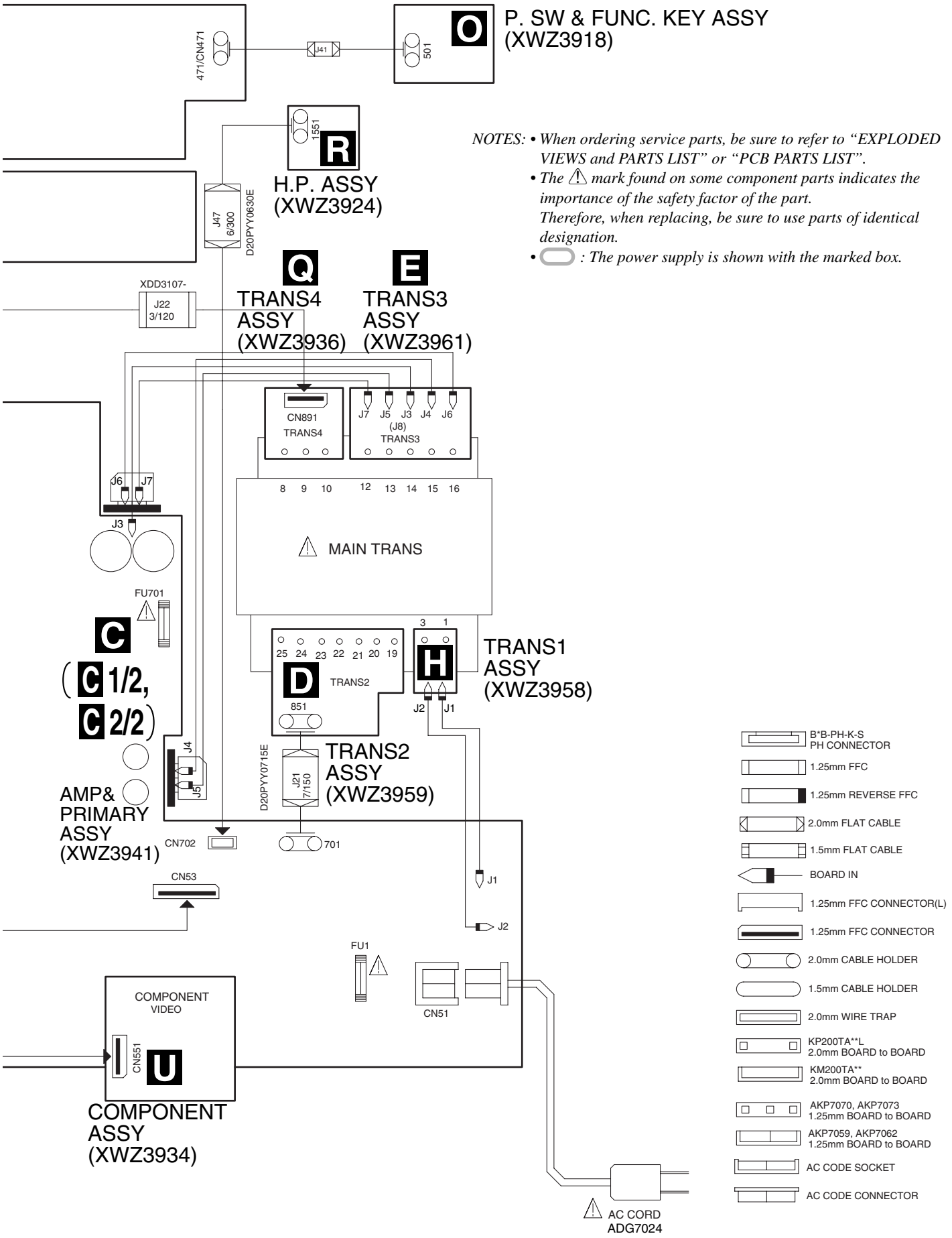
## 3.1 BLOCK DIAGRAM




∗1 (dB) ∗2(dB) ∗3(dB)
14.1/24.1 14.1/24.1 14.2/24.9
1551
HEADPHONE
A. MUTE
Q1552
GND
R
CN702
POWER PACK
IC602
30dB
RY751
FL/FR
SP–A
BYPASS
TONE
IC110
uPC4570G2
(PRE AMP)
FL
CN106
CN601
15dB ATT.
Q653
A. MUTE
Q651
IC602 (FL)
IC601 (FR)
C
G
IC108
BD3813FS
ELECTRIC VOLUME
IC111
SL
IC602
RY753
SL/SR
15dB ATT.
Q632
A. MUTE
Q631
IC602 (SL)
IC603/600 (SR)
IC112
C
IC601
RY752
CENTER
15dB ATT.
Q601
A. MUTE
Q603
SB
IC600
RY752
SB
15dB ATT.
Q682
A. MUTE
Q681
IC600 (6ch)
IC603 (7ch)
IC109
DB3812F
ELECTRIC
VOLUME
IC115
CN111
15dB ATT.
Q362
F
CN302
A. MUTE
Q303
I
SW PREOUT
VCR PLAY
TV/SAT
DVD/LD
VCR REC
MONITOR
IC301
(COMPOSITE SEL)
NJM2595M
6dB
POWER AMP
IC601, IC602
NECK+B
NECK-B
+BVL
-BVL
Q701
Q702
D701
D702
FL AC
CN401
T+12V
IC805
+12V
-12V
IC801
IC802
D801–D804
D+5V
A+5V
D+5.6V
IC803
IC804
IC806
CN8003
D721–D724
CN111
Stby+5.6V
IC51
D51-D54
T51
RY51
AC IN
T1
POWER
TRANSFORMER

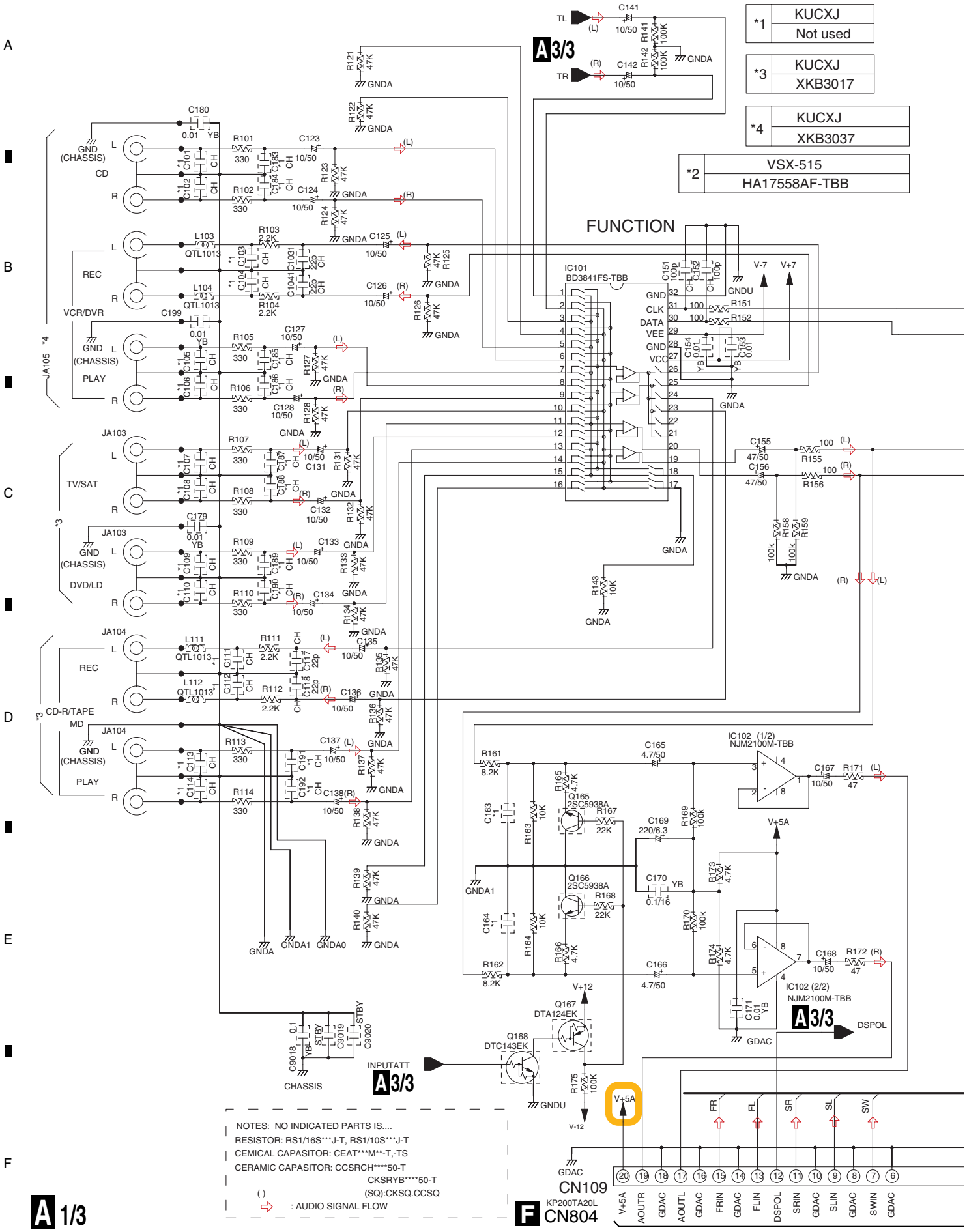
## 3.2 OVERALL WIRING CONNECTION DIAGRAM





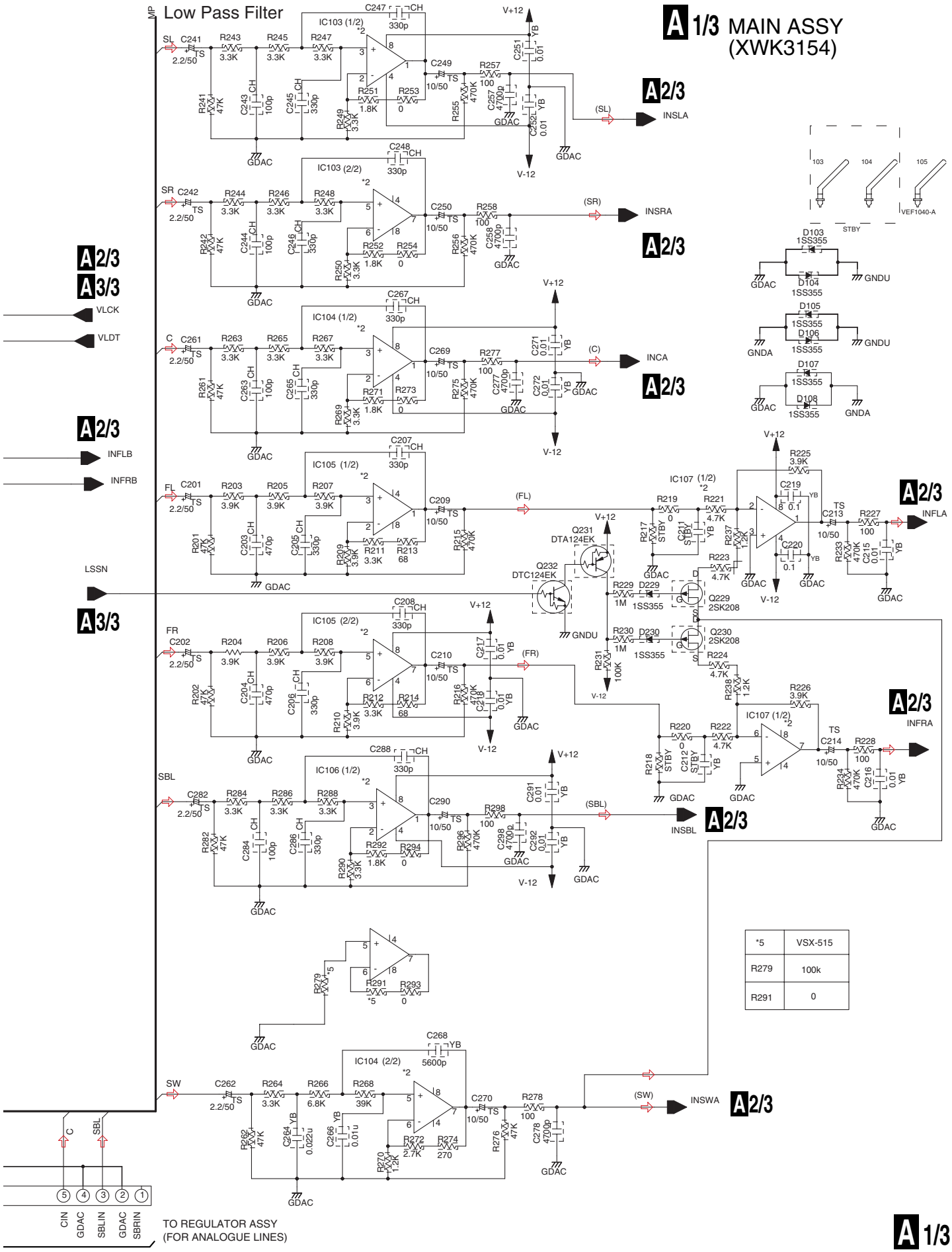

*NOTES:*
- *When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *: The power supply is shown with the marked box.*

# 3.3 MAIN ASSY (1/3)



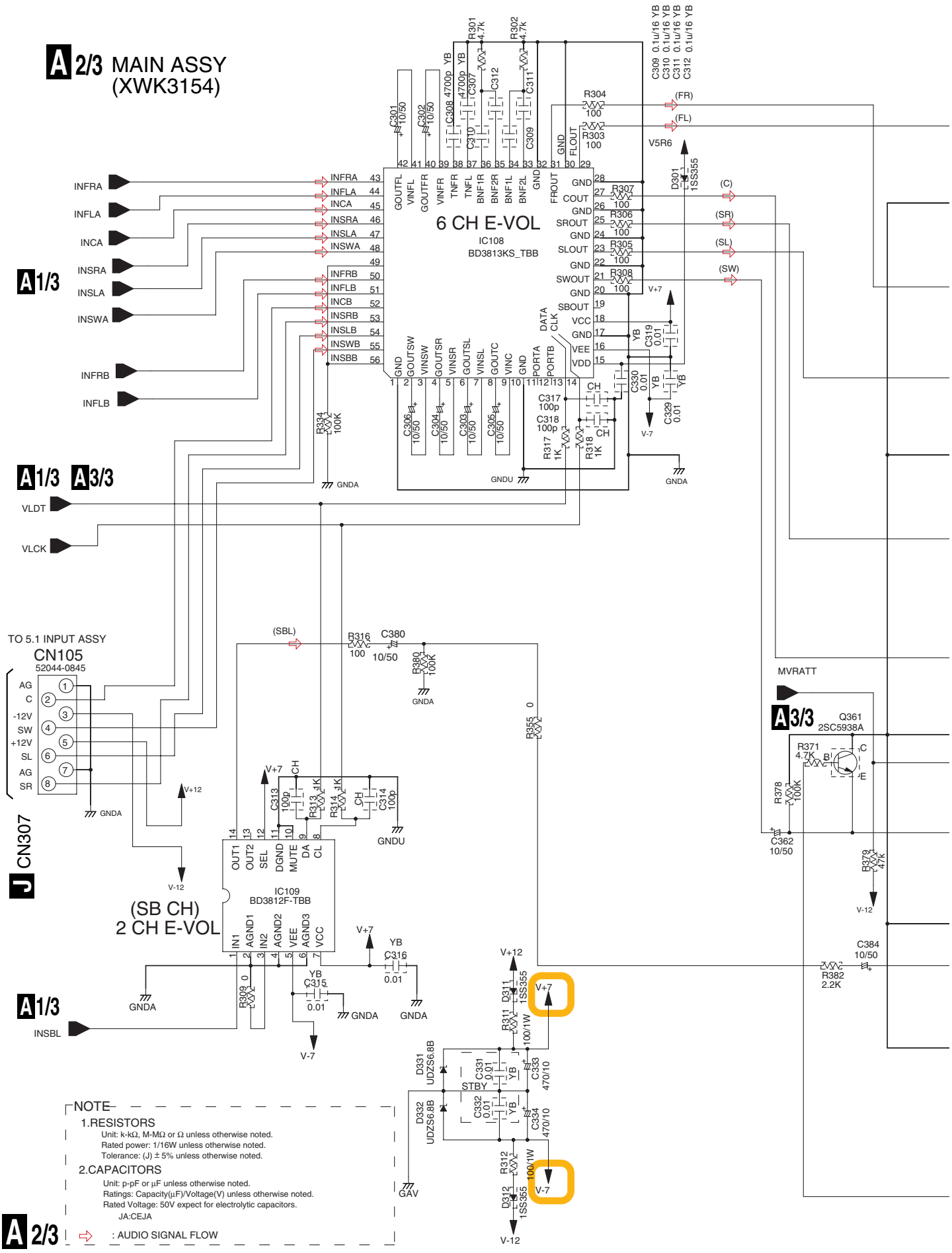
# A 1/3 MAIN ASSY (XWK3154)

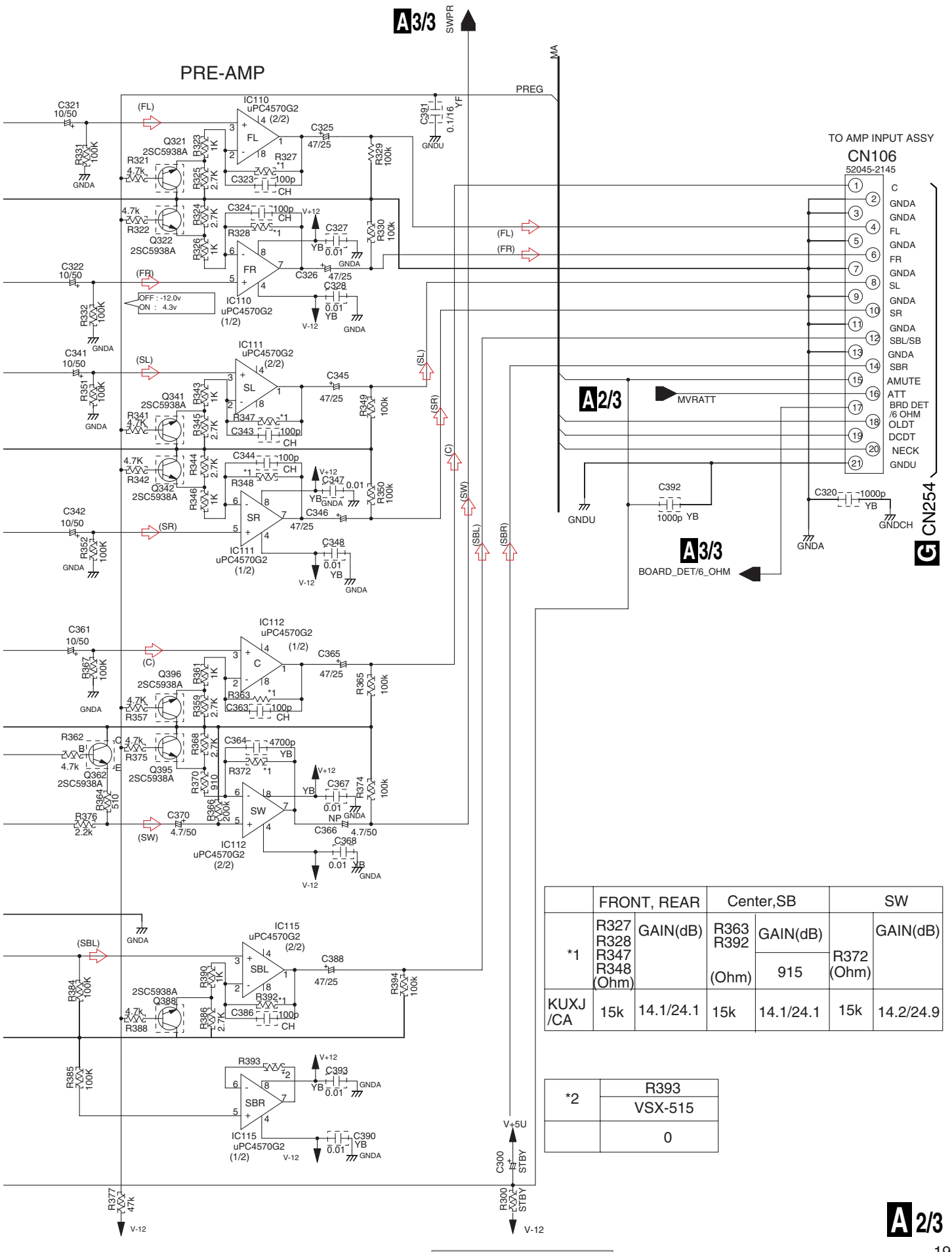
## Low Pass Filter




| *5 | VSX-515 |
|---|---|
| R279 | 100k |
| R291 | 0 |

# 3.4 MAIN ASSY (2/3)

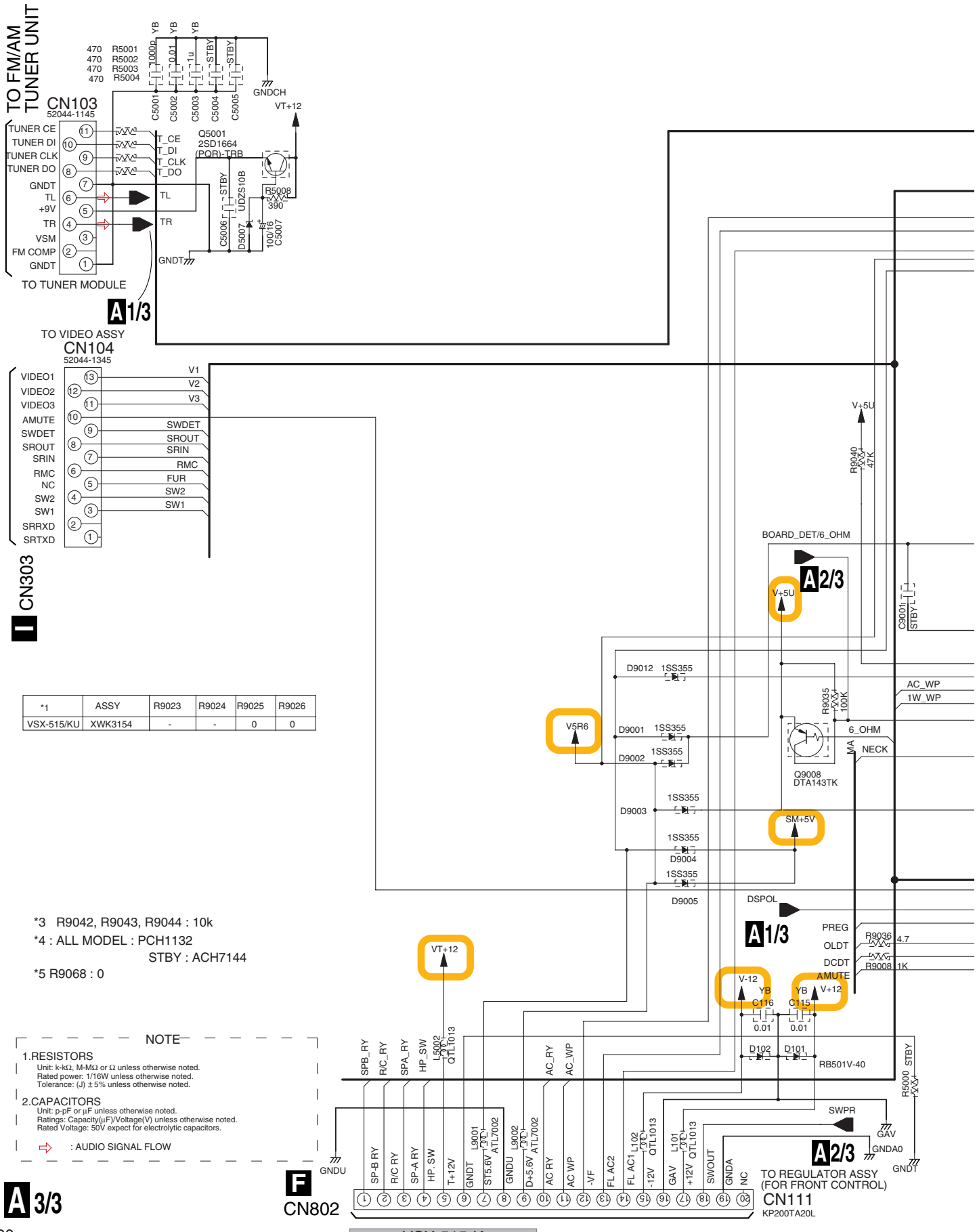





| | FRONT, REAR | | Center,SB | | SW | |
|---|---|---|---|---|---|---|
| *1 | R327 R328 R347 R348 (Ohm) | GAIN(dB) | R363 R392 (Ohm) | GAIN(dB) 915 | R372 (Ohm) | GAIN(dB) |
| KUXJ /CA | 15k | 14.1/24.1 | 15k | 14.1/24.1 | 15k | 14.2/24.9 |

| *2 | R393 |
|---|---|
| | VSX-515 |
| | 0 |

# 3.5 MAIN ASSY (3/3)




| *1 | ASSY | R9023 | R9024 | R9025 | R9026 |
|---|---|---|---|---|---|
| VSX-515/KU | XWK3154 | - | - | 0 | 0 |

*3 R9042, R9043, R9044 : 10k

*4 : ALL MODEL : PCH1132
STBY : ACH7144

*5 R9068 : 0

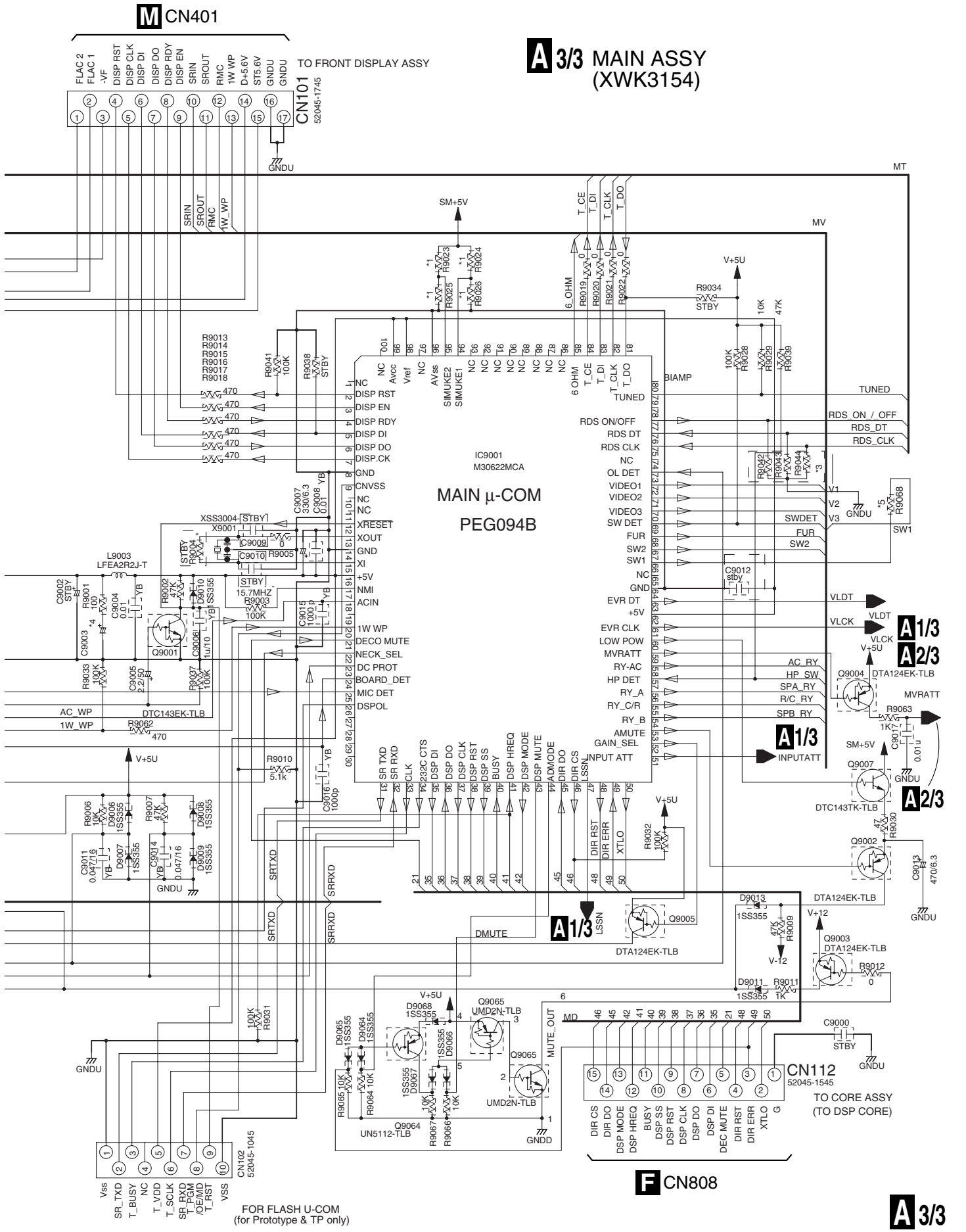
NOTE

1.RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W unless otherwise noted.
Tolerance: (J) ±5% unless otherwise noted.

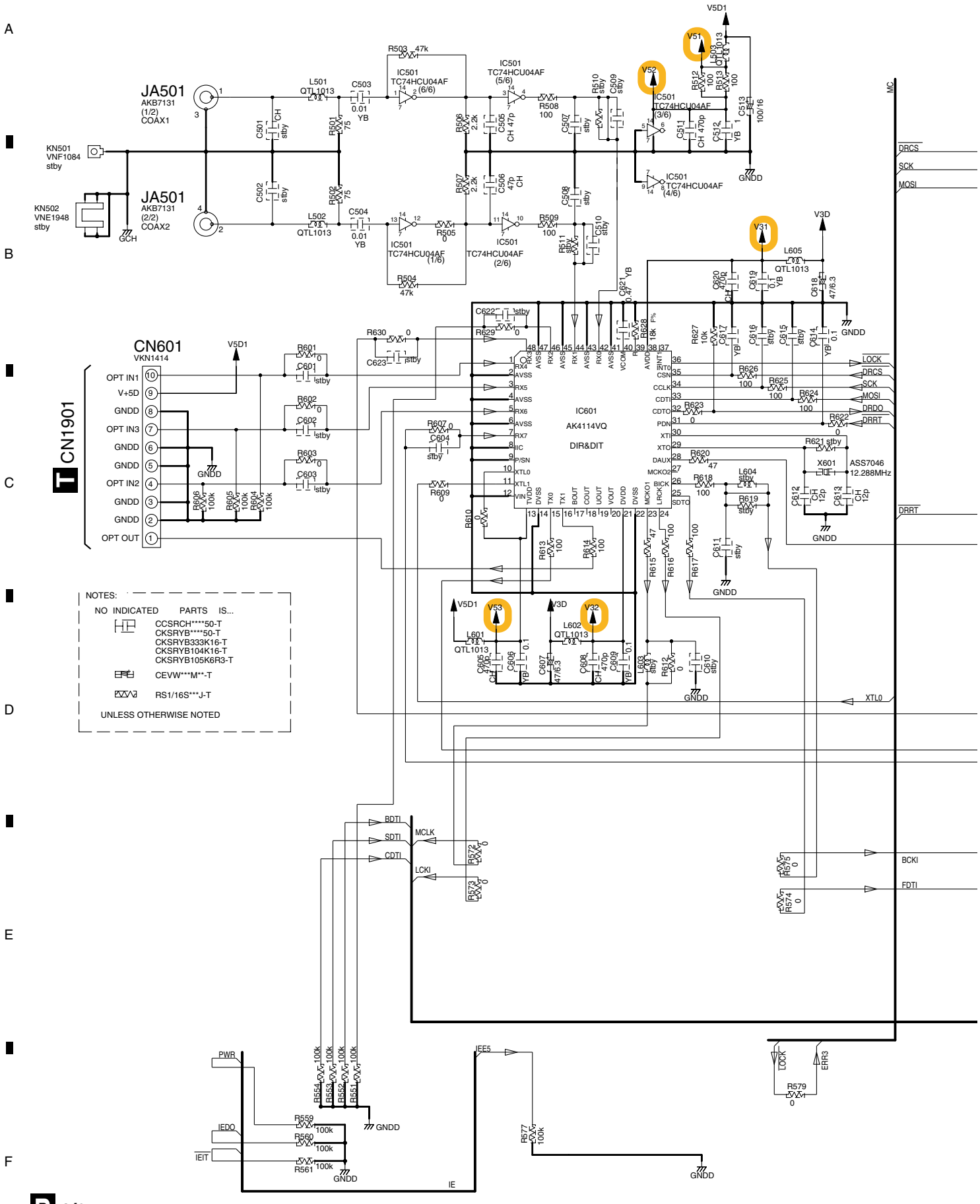
2.CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.

⇨ : AUDIO SIGNAL FLOW

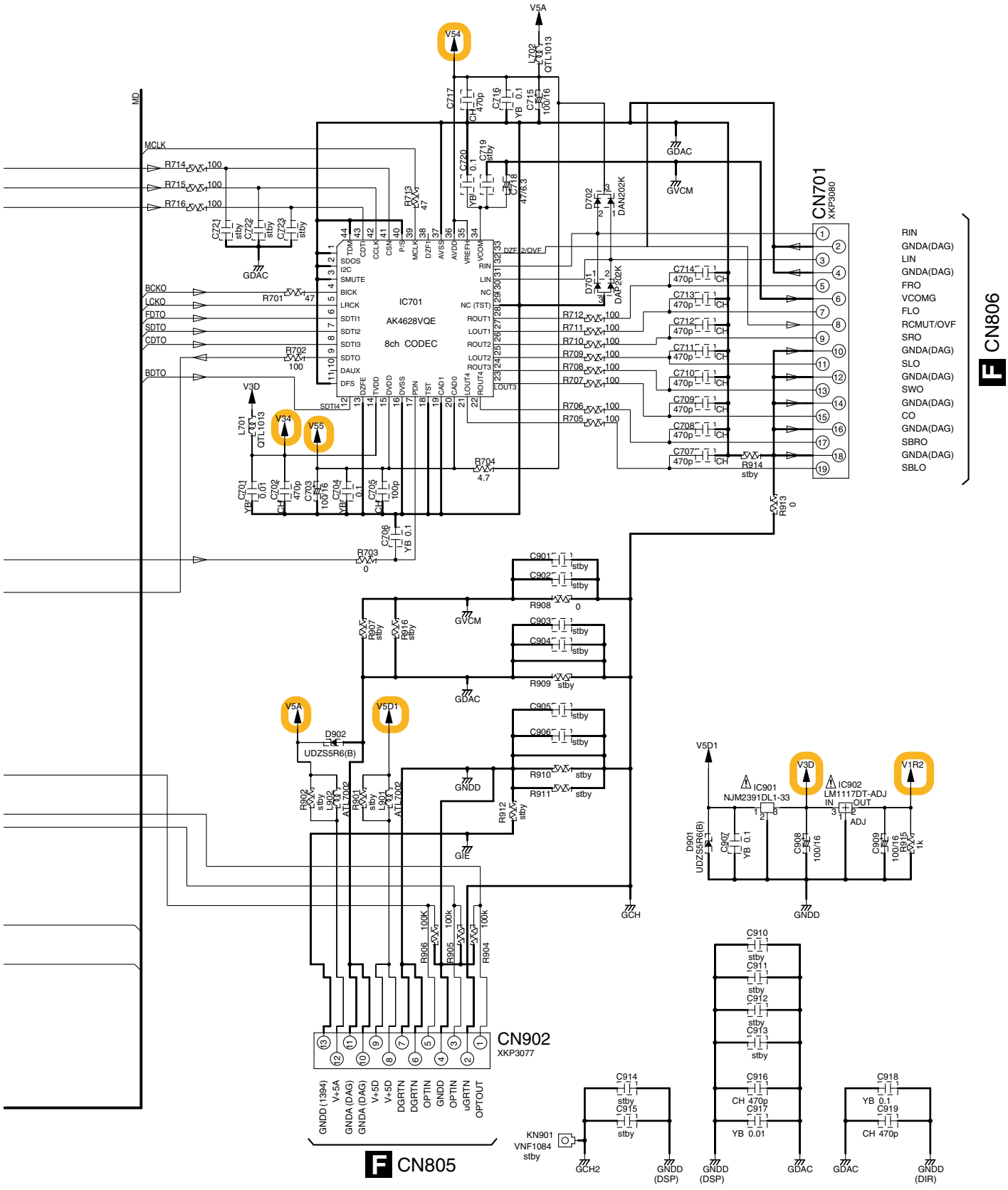
# A 3/3 MAIN ASSY (XWK3154)



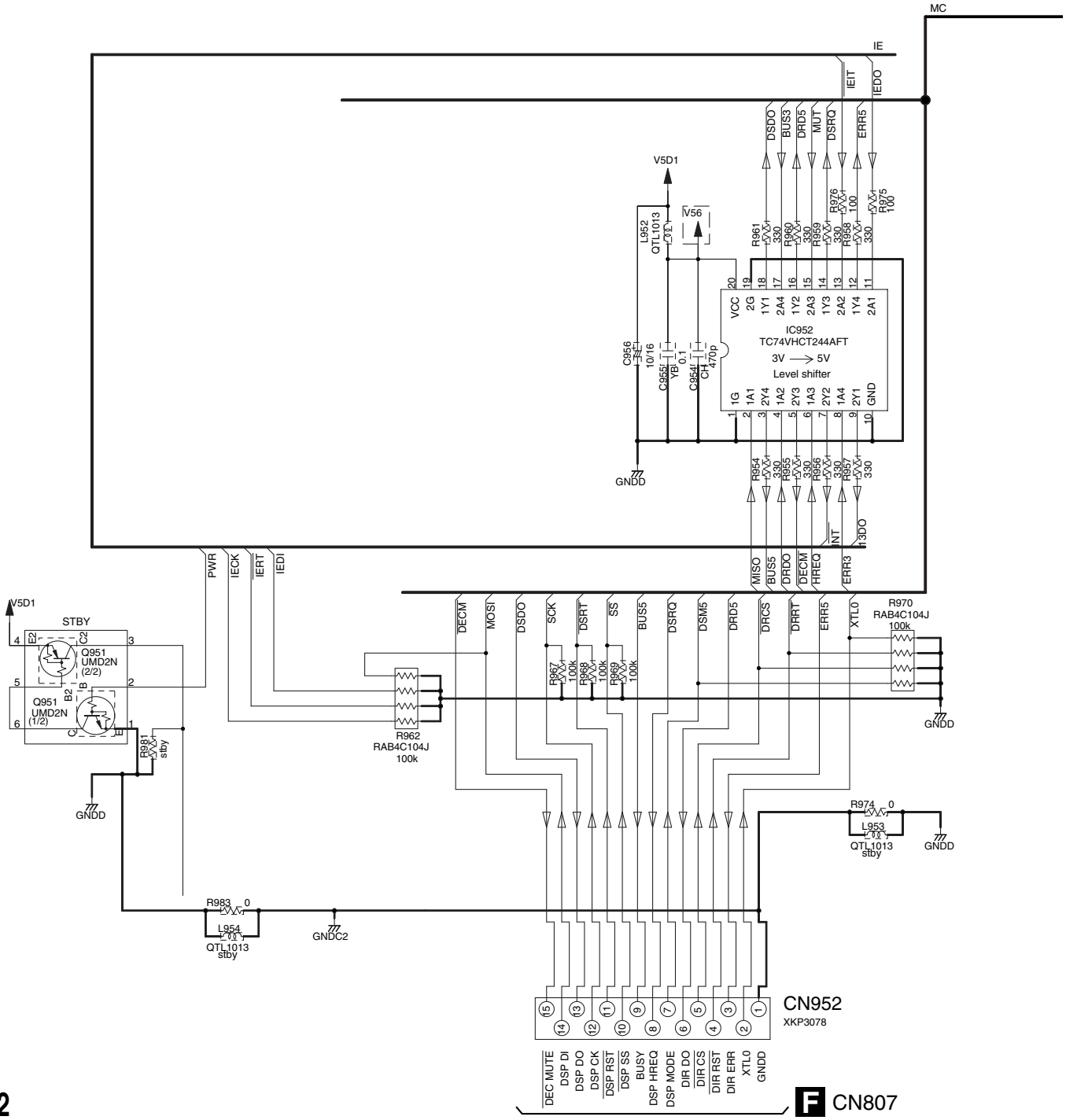
# 3.6 DSP ASSY (1/2)

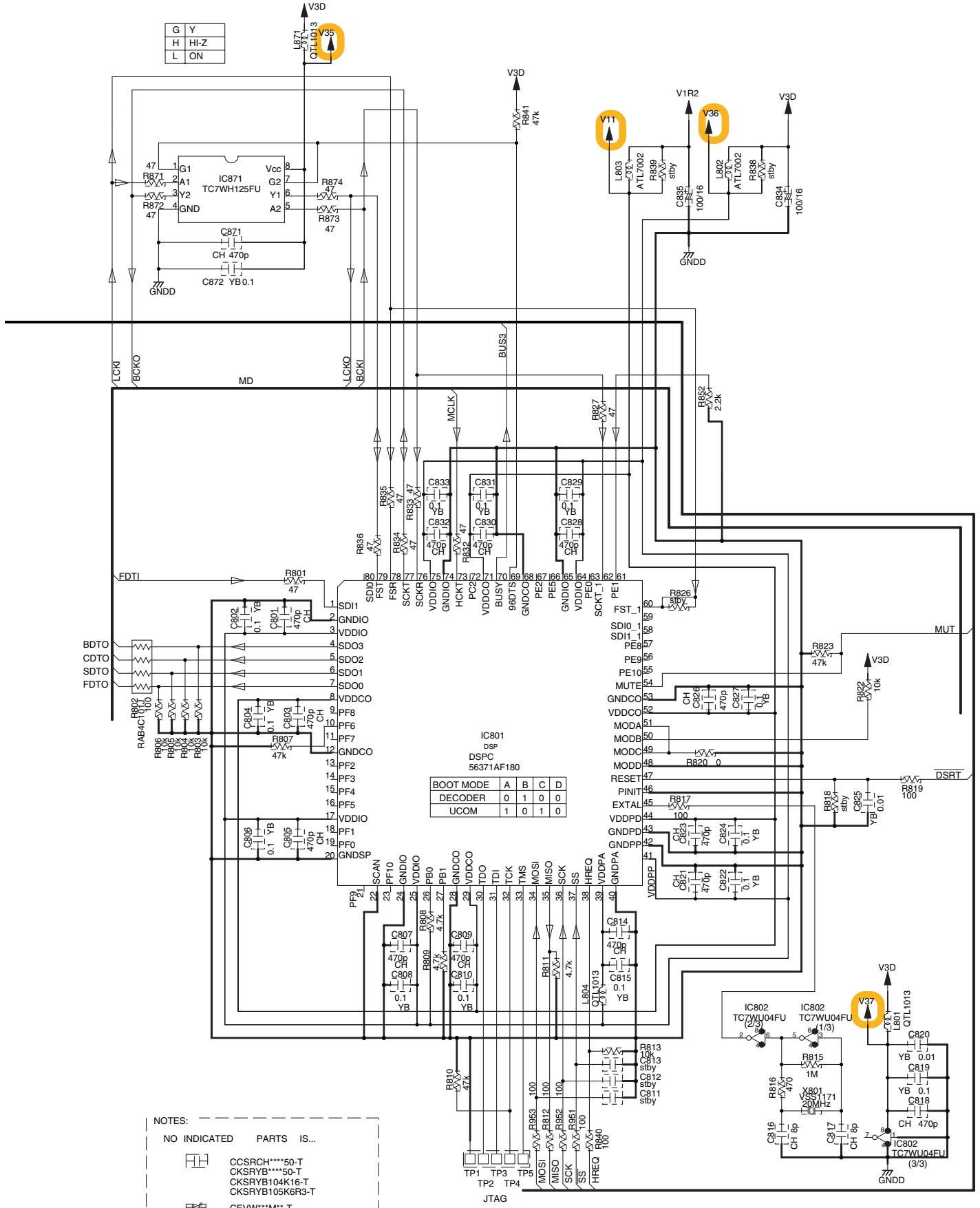



B 1/2


IC701
AK4628VQE
8ch CODEC
CN701
XKP3080
CN806
CN902
XKP3077
CN805
IC901
NJM2391DL1-33
IC902
LM1117DT-ADJ
B 1/2 DSP ASSY
(AWX8573)

# 3.7 DSP ASSY (2/2)

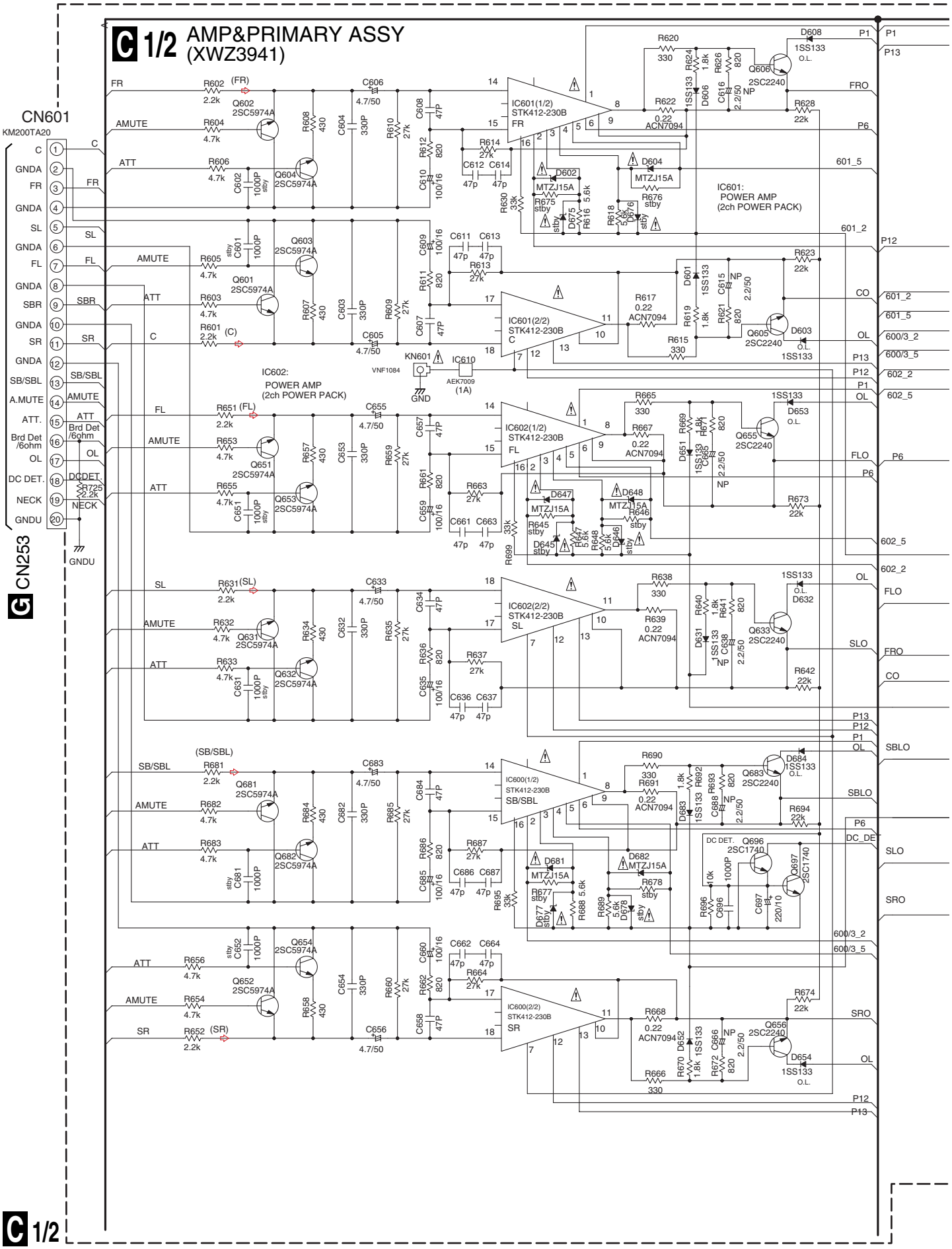


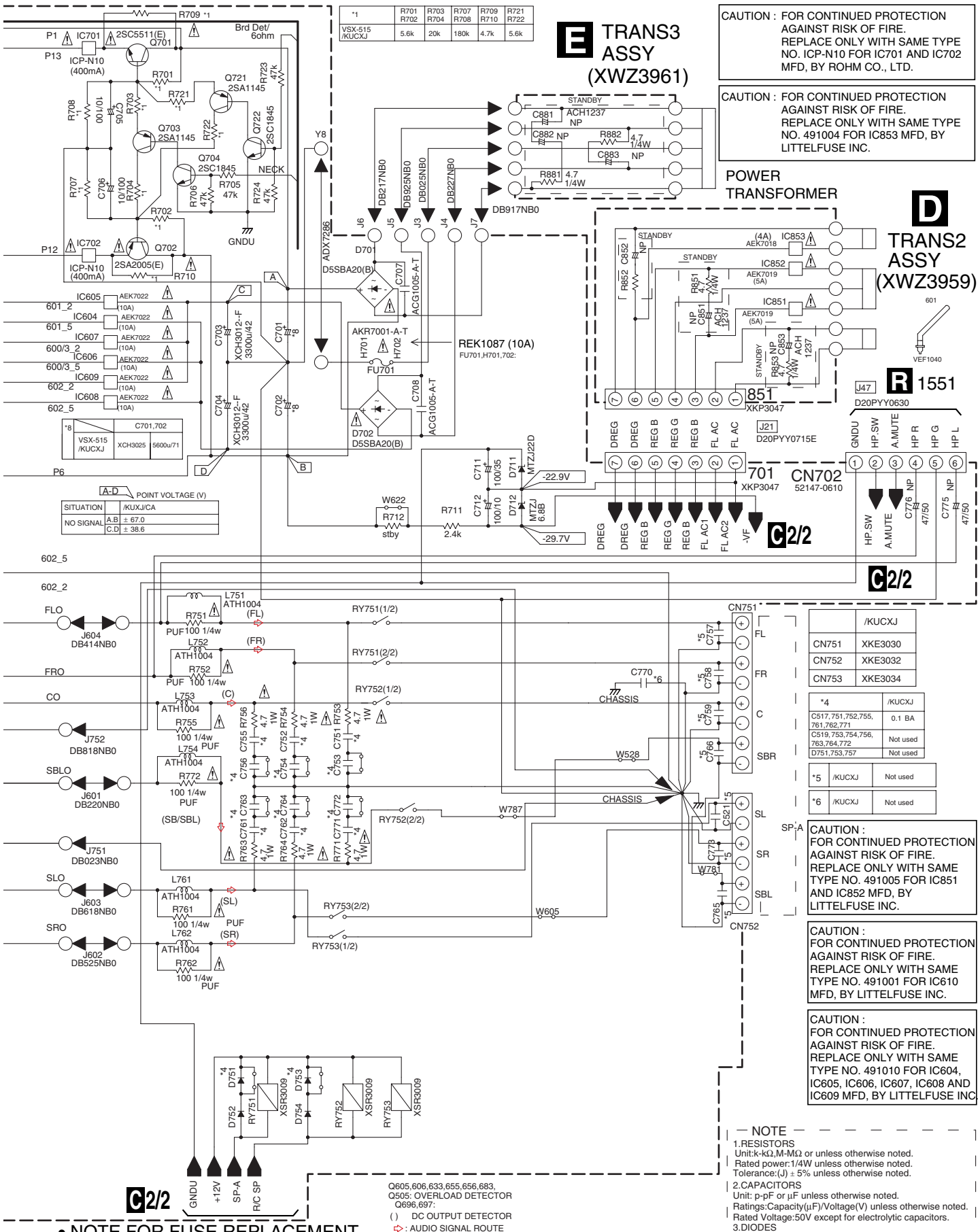



B 2/2 DSP ASSY (AWX8573)

B 2/2

# 3.8 AMP & PRIMARY (1/2), TRANS2 and TRANS3 ASSYS






| *1 | R701 R702 | R703 R704 | R707 R708 | R709 R710 | R721 R722 |
|---|---|---|---|---|---|
| VSX-515 /KUCXJ | 5.6k | 20k | 180k | 4.7k | 5.6k |

| | /KUCXJ |
|---|---|
| CN751 | XKE3030 |
| CN752 | XKE3032 |
| CN753 | XKE3034 |

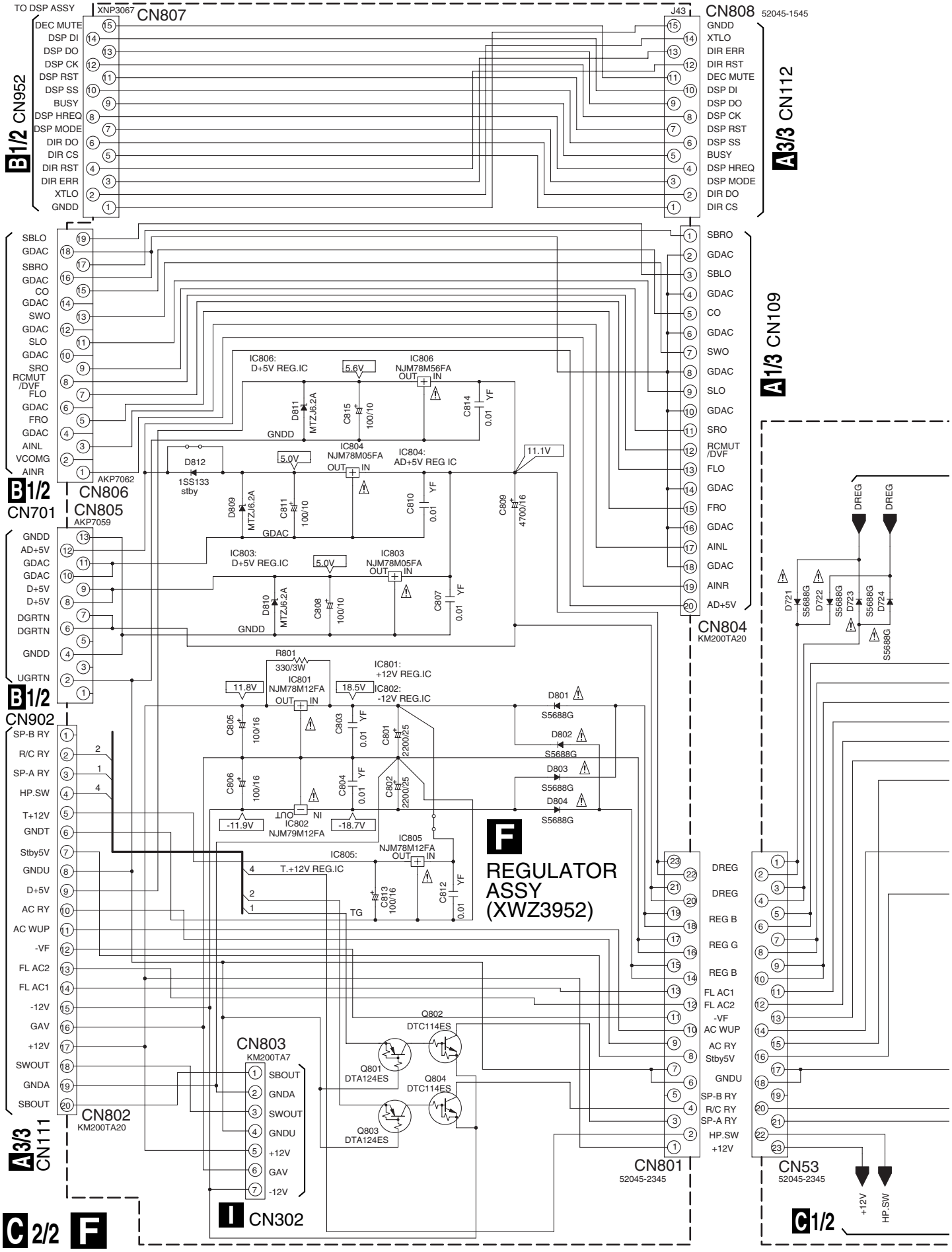
| *4 | /KUCXJ |
|---|---|
| C517,751,752,755, 761,762,771 | 0.1 BA |
| C519,753,754,756, 763,764,772 | Not used |
| D751,753,757 | Not used |

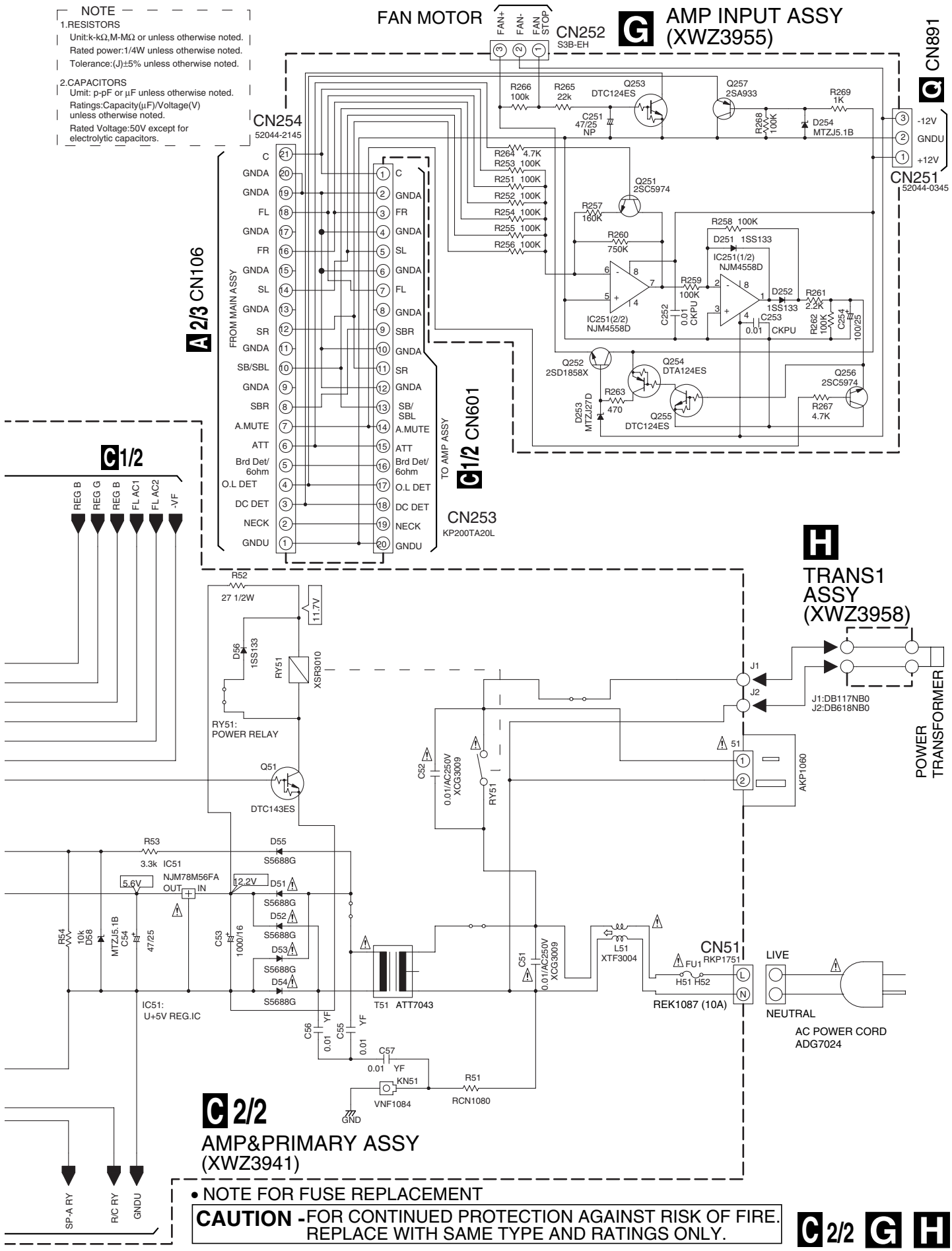
| | | |
|---|---|---|
| *5 | /KUCXJ | Not used |
| *6 | /KUCXJ | Not used |

| *8 | C701,702 | |
|---|---|---|
| VSX-515 /KUCXJ | XCH3025 | 5600u/71 |

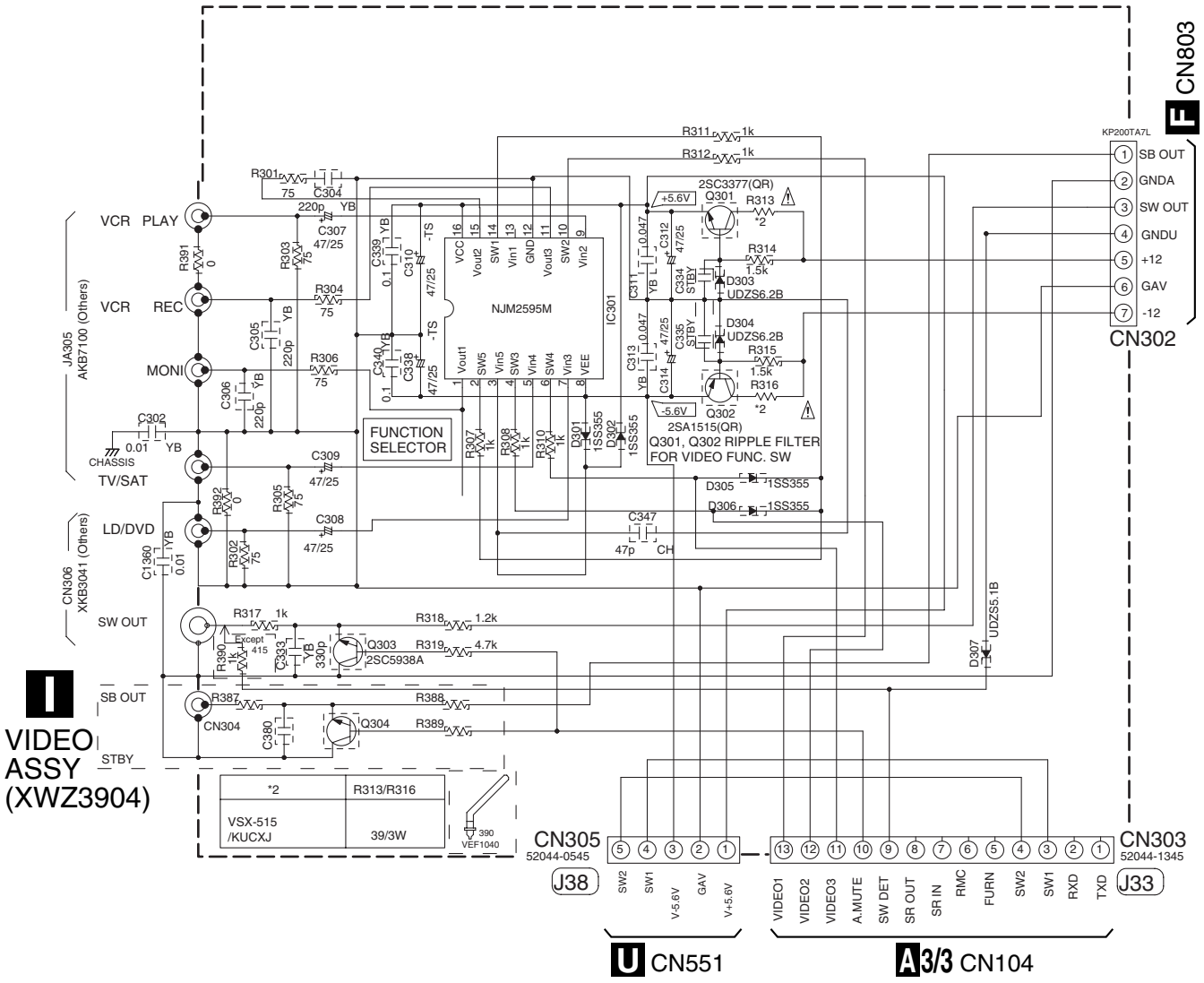
| A-D | POINT VOLTAGE (V) |
|---|---|
| SITUATION | /KUXJ/CA |
| NO SIGNAL | A,B ± 67.0 |
| | C,D ± 38.6 |

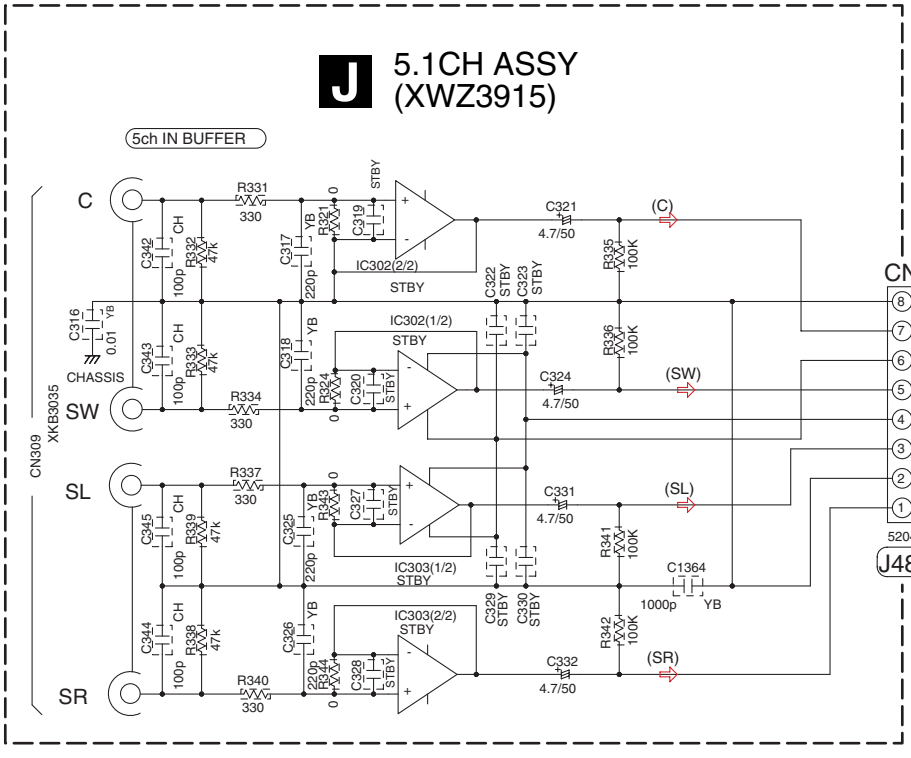
# 3.9 AMP&PRIMARY(2/2), REGULATOR, AMP INPUT and TRANS1 ASSYS




NOTE
1.RESISTORS
Unit:k-kΩ,M-MΩ or unless otherwise noted.
Rated power:1/4W unless otherwise noted.
Tolerance:(J)±5% unless otherwise noted.
2.CAPACITORS
Umit: p-pF or µF unless otherwise noted.
Ratings:Capacity(µF)/Voltage(V) unless otherwise noted.
Rated Voltage:50V except for electrolytic capacitors.
FAN MOTOR
FAN+
FAN-
FAN STOP
CN252
S3B-EH
G AMP INPUT ASSY (XWZ3955)
CN254
52044-2145
A 2/3 CN106
FROM MAIN ASSY
C
GNDA
FL
SR
SB/SBL
A.MUTE
ATT
Brd Det/ 6ohm
O.L DET
DC DET
NECK
GNDU
SL
SBR
SB/ SBL
TO AMP ASSY
C 1/2 CN601
CN253
KP200TA20L
R266 100k
R265 22k
Q253 DTC124ES
Q257 2SA933
R269 1K
C251 47/25 NP
R268 100K
D254 MTZJ5.1B
Q CN891
-12V
GNDU
+12V
CN251
52044-0345
R264 4.7K
R253 100K
R251 100K
R252 100K
R254 100K
R255 100K
R256 100K
Q251 2SC5974
R257 160K
R260 750K
R258 100K
D251 1SS133
IC251(1/2) NJM4558D
IC251(2/2) NJM4558D
R259 100K
C252 0.01 CKPU
D252 1SS133
R261 2.2K
C253 0.01 CKPU
R262 100K
C254 100/25
Q252 2SD1858X
Q254 DTA124ES
Q256 2SC5974
R263 470
D253 MTZJ27D
Q255 DTC124ES
R267 4.7K
C 1/2
REG B
REG G
REG B
FL AC1
FL AC2
-VF
H TRANS1 ASSY (XWZ3958)
R52 27 1/2W
11.7V
D56 1SS133
RY51 XSR3010
RY51: POWER RELAY
J1
J2
J1:DB117NB0
J2:DB618NB0
POWER TRANSFORMER
Q51 DTC143ES
C52 0.01/AC250V XCG3009
RY51
51
AKP1060
R53 3.3k
IC51 NJM78M56FA
5.6V
12.2V
D55 S5688G
D51 S5688G
D52 S5688G
D53 S5688G
D54 S5688G
R54 10k D58 MTZJ5.1B
C54 47/25
C53 1000/16
IC51: U+5V REG.IC
T51 ATT7043
C51 0.01/AC250V XCG3009
L51 XTF3004
CN51
FU1 RKP1751
H51 H52
REK1087 (10A)
LIVE
NEUTRAL
AC POWER CORD ADG7024
C56 0.01 YF
C55 0.01 YF
C57 0.01 YF
KN51
VNF1084
R51 RCN1080
GND
C 2/2
AMP&PRIMARY ASSY (XWZ3941)
SP-A RY
R/C RY
GNDU
• NOTE FOR FUSE REPLACEMENT
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.
C 2/2 G H

# 3.10 VIDEO and 5.1CH ASSYS



A

B

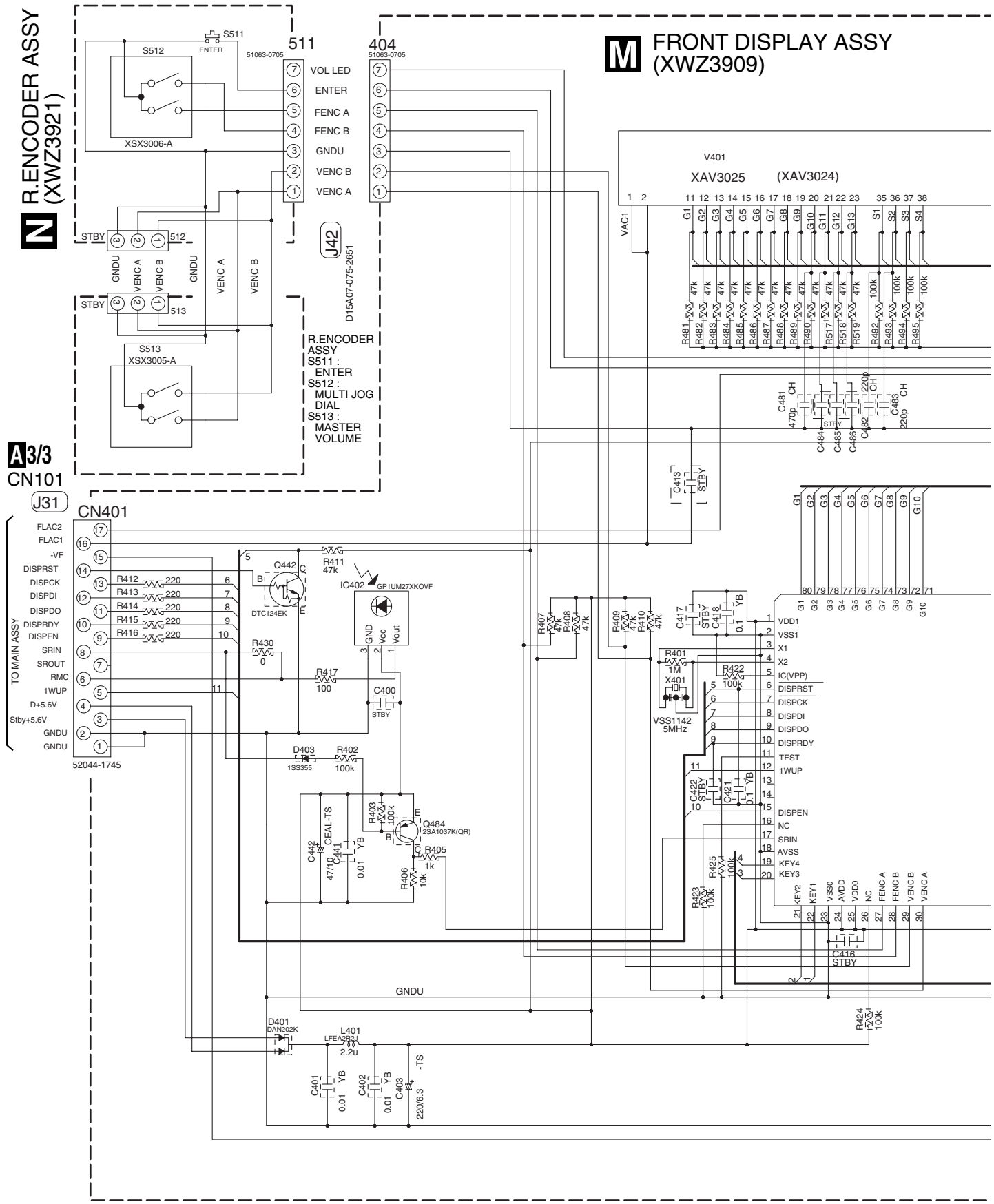
C

D

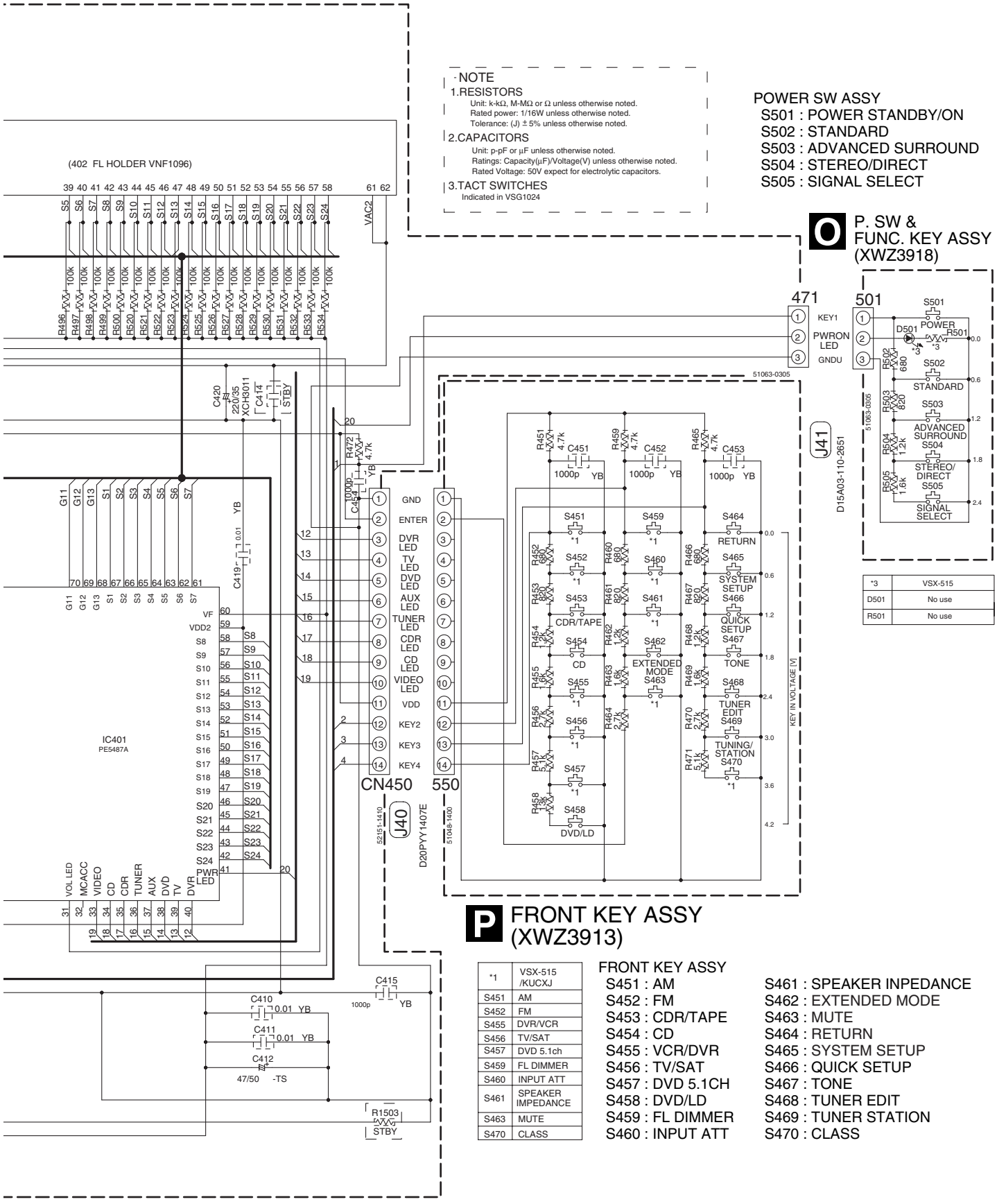
E

F

# 3.11 FRONT DISPLAY, R. ENCODER, P. SW&FUNC KEY and F. KEY ASSYS



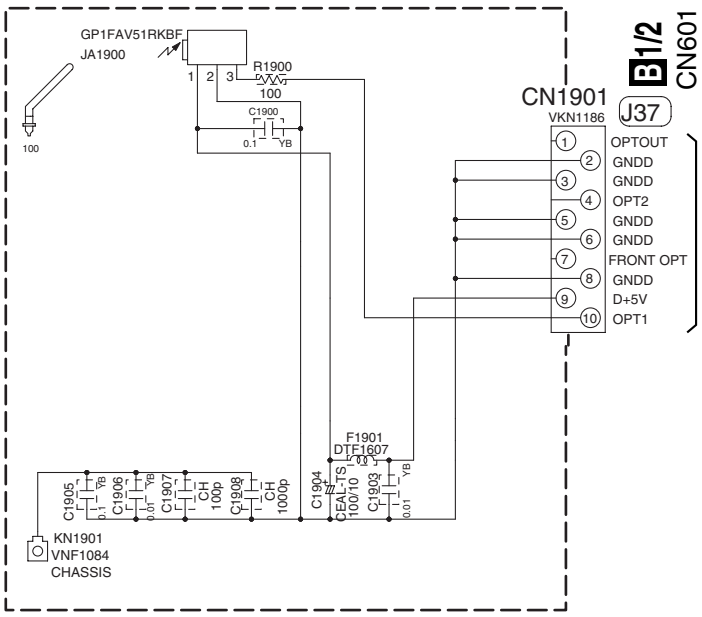

M N



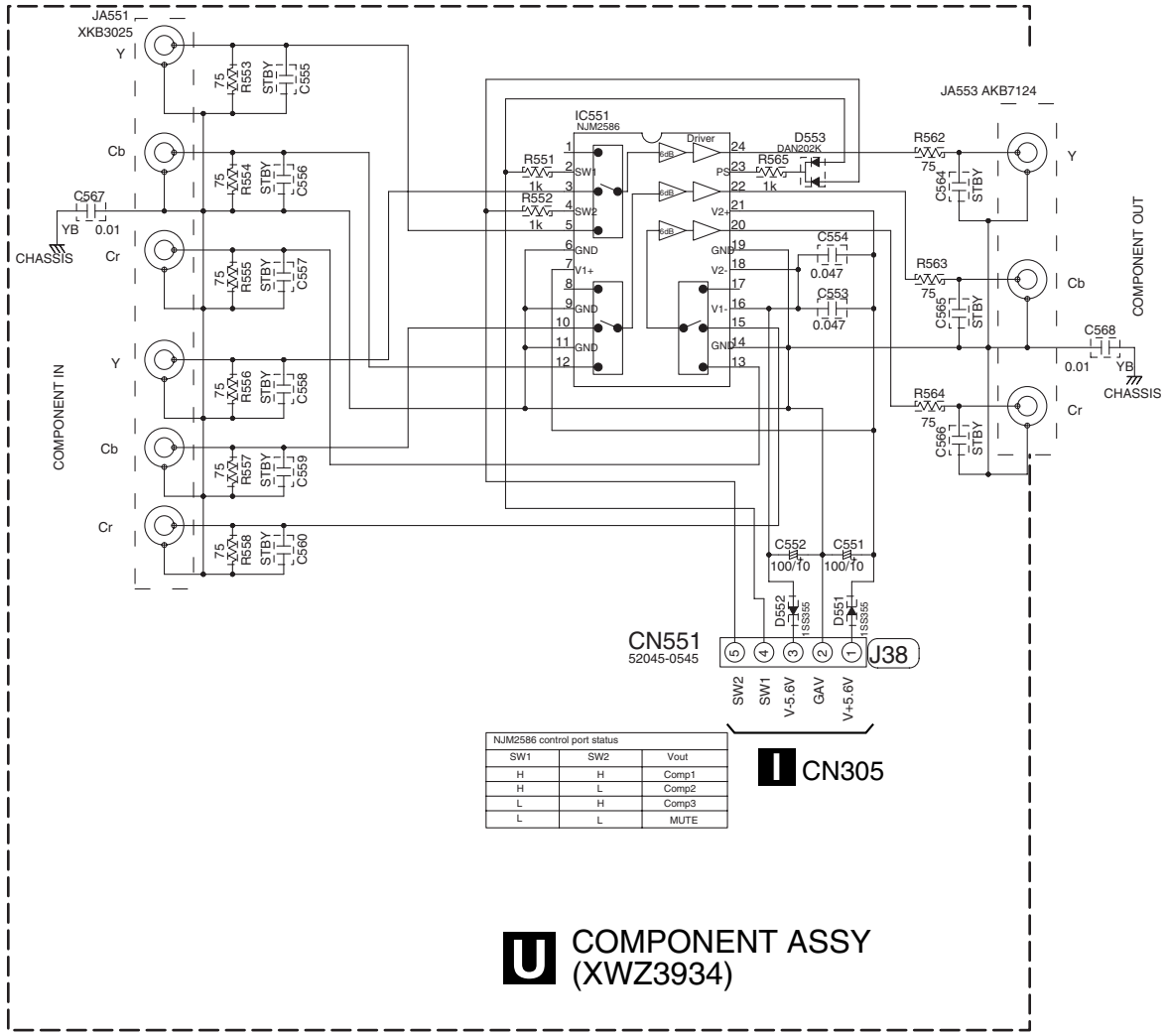

| *3 | VSX-515 |
|---|---|
| D501 | No use |
| R501 | No use |

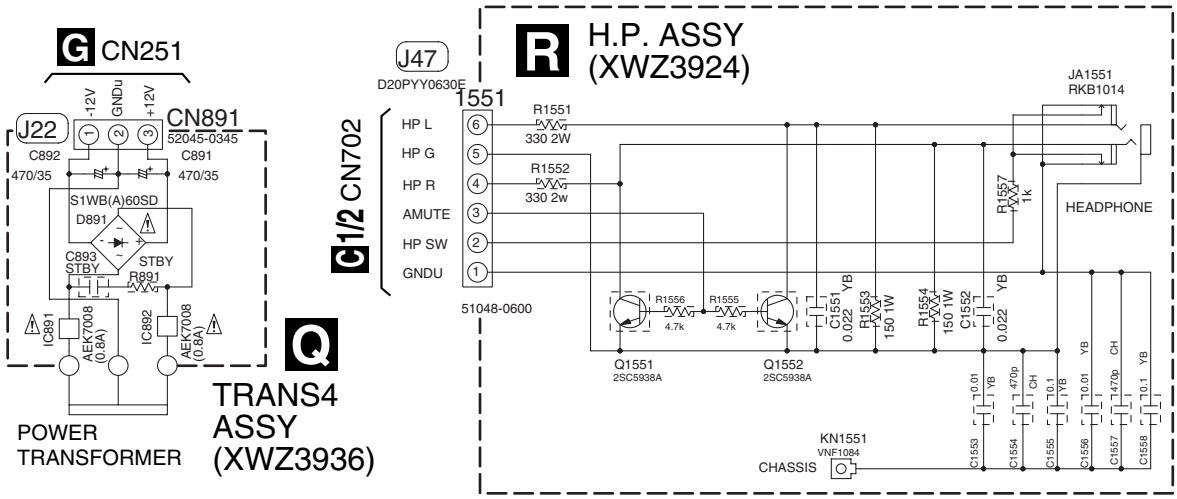
| *1 | VSX-515 /KUCXJ |
|---|---|
| S451 | AM |
| S452 | FM |
| S455 | DVR/VCR |
| S456 | TV/SAT |
| S457 | DVD 5.1ch |
| S459 | FL DIMMER |
| S460 | INPUT ATT |
| S461 | SPEAKER IMPEDANCE |
| S463 | MUTE |
| S470 | CLASS |

# 3.12 TRANS4, H.P., D. IN and COMPONENT ASSYS




DIGITAL IN ASSY
(XWZ3927)




CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.800 FOR IC891 AND IC892 MFD, BY LITTELFUSE INC.

NOTE

1.RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W unless otherwise noted.
Tolerance: (J) 5% unless otherwise noted.

2.CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.

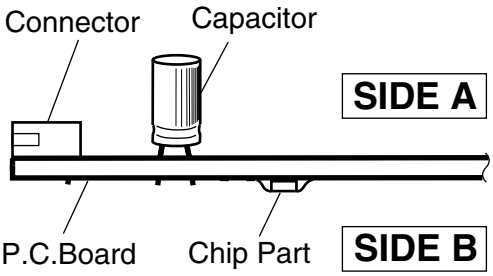
# 4. PCB CONNECTION DIAGRAM

## NOTE FOR PCB DIAGRAMS :

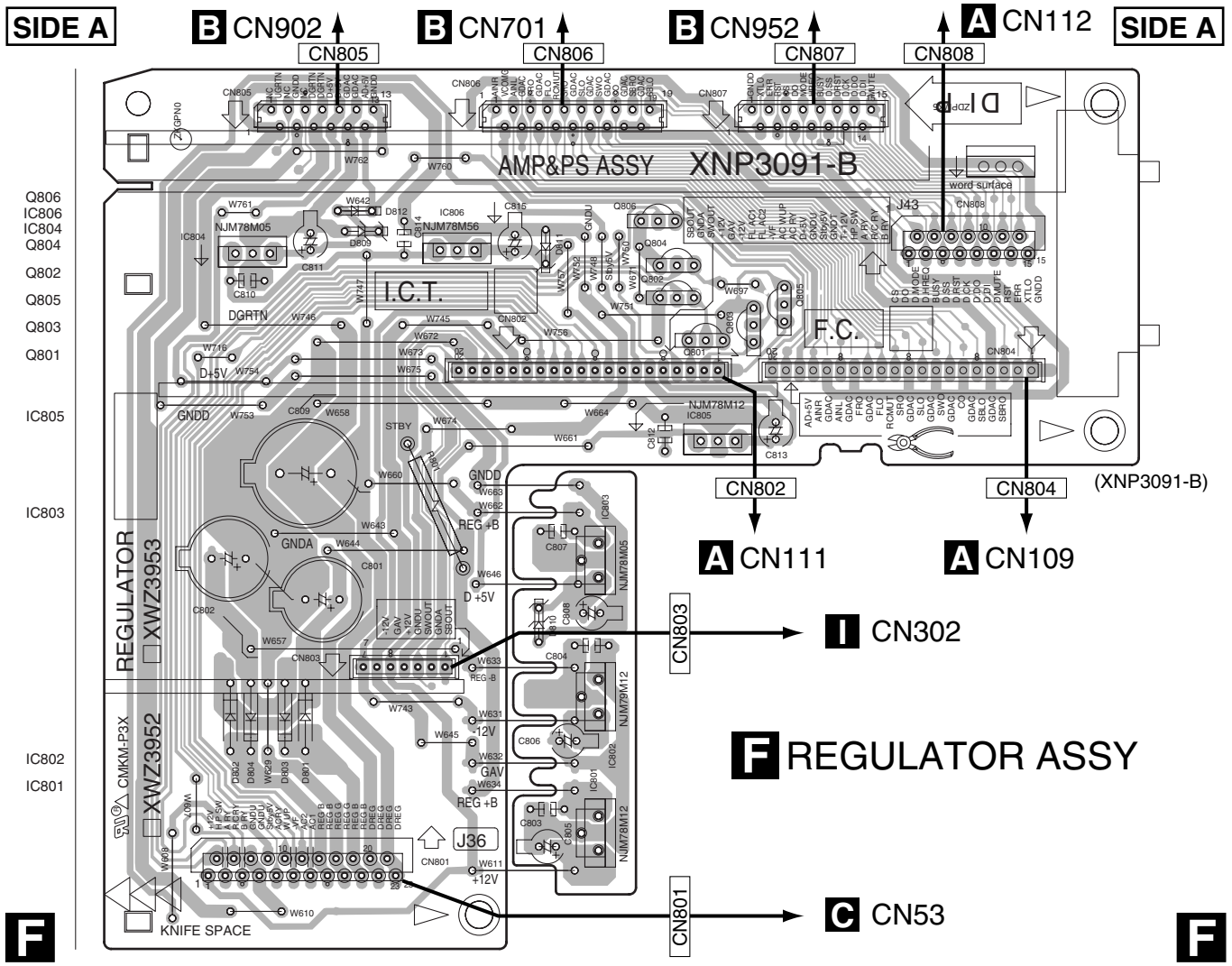
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol In PCB Diagrams | Symbol In Schematic Diagrams | Part Name |
|---|---|---|
| B C E | B C E B C E | Transistor |
| B C E | B C E B C E | Transistor with resistor |
| D G S | D G S D G S | Field effect transistor |
| | | Resistor array |
| | | 3-terminal regulator |

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

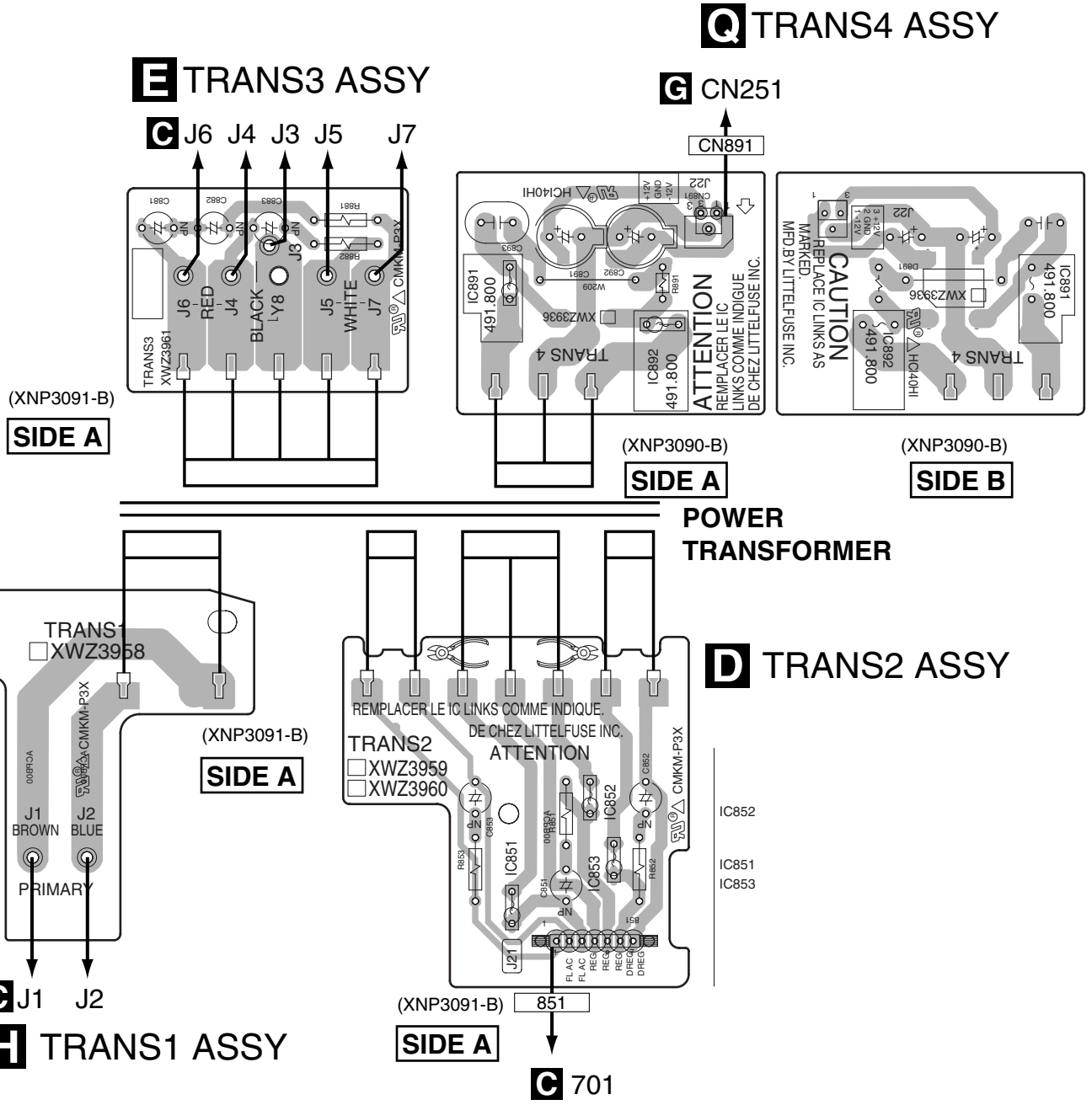



## 4.1 REGULATOR ASSY



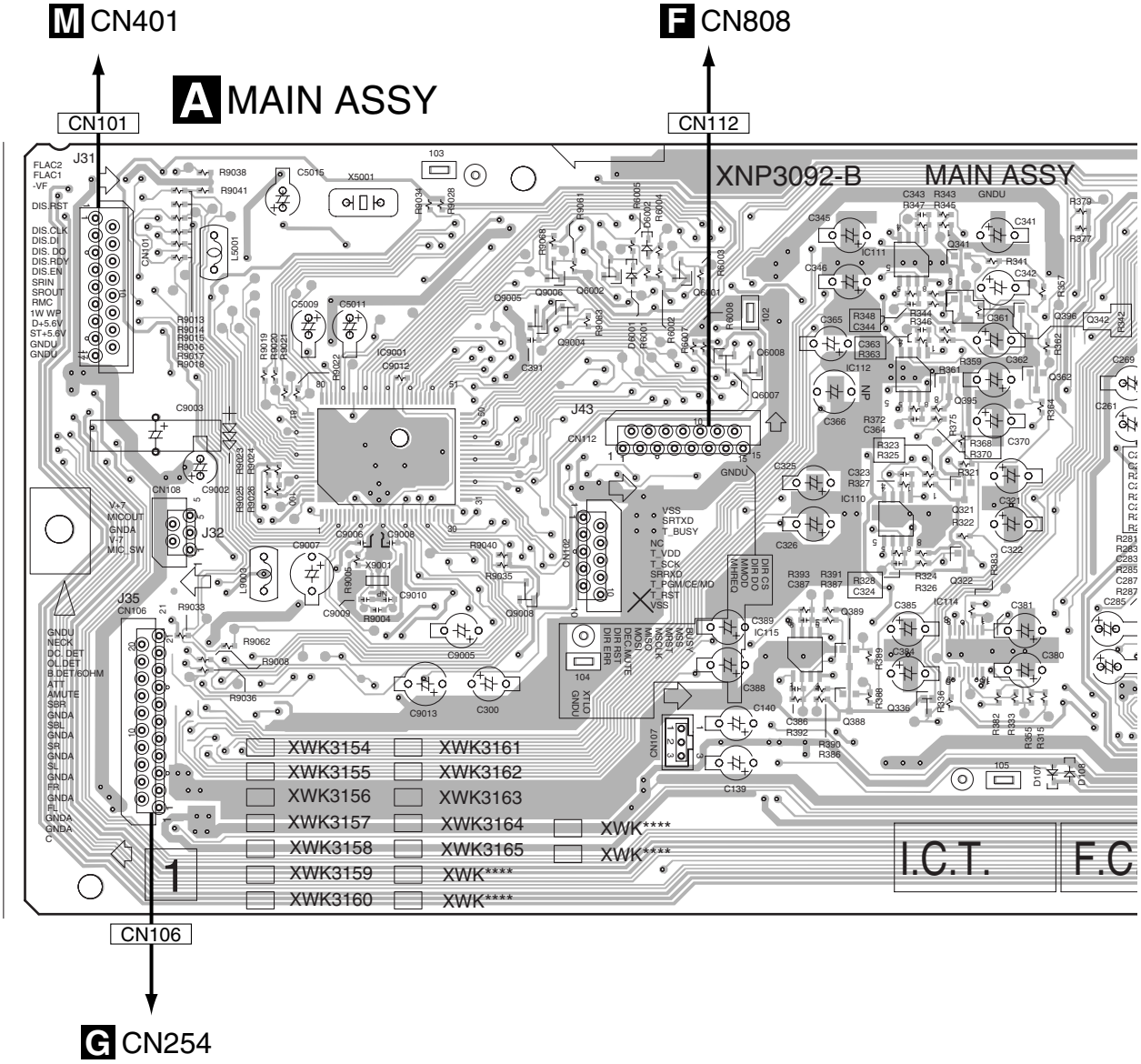
## 4.2 TRANS2, TRANS3, TRANS1 and TRANS4 ASSYS

**SIDE A** **SIDE B**

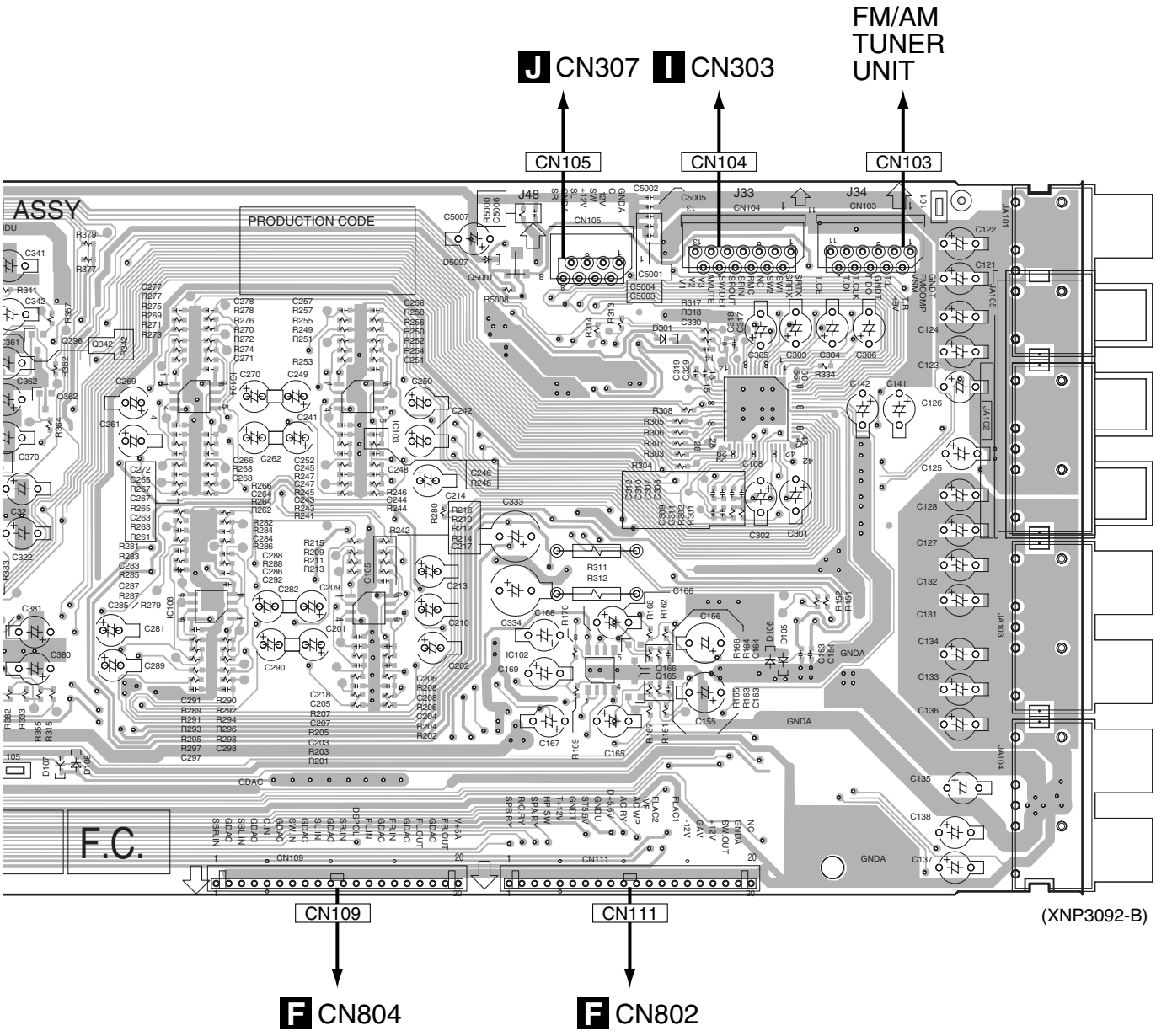


# 4.3 MAIN ASSY

**SIDE A**

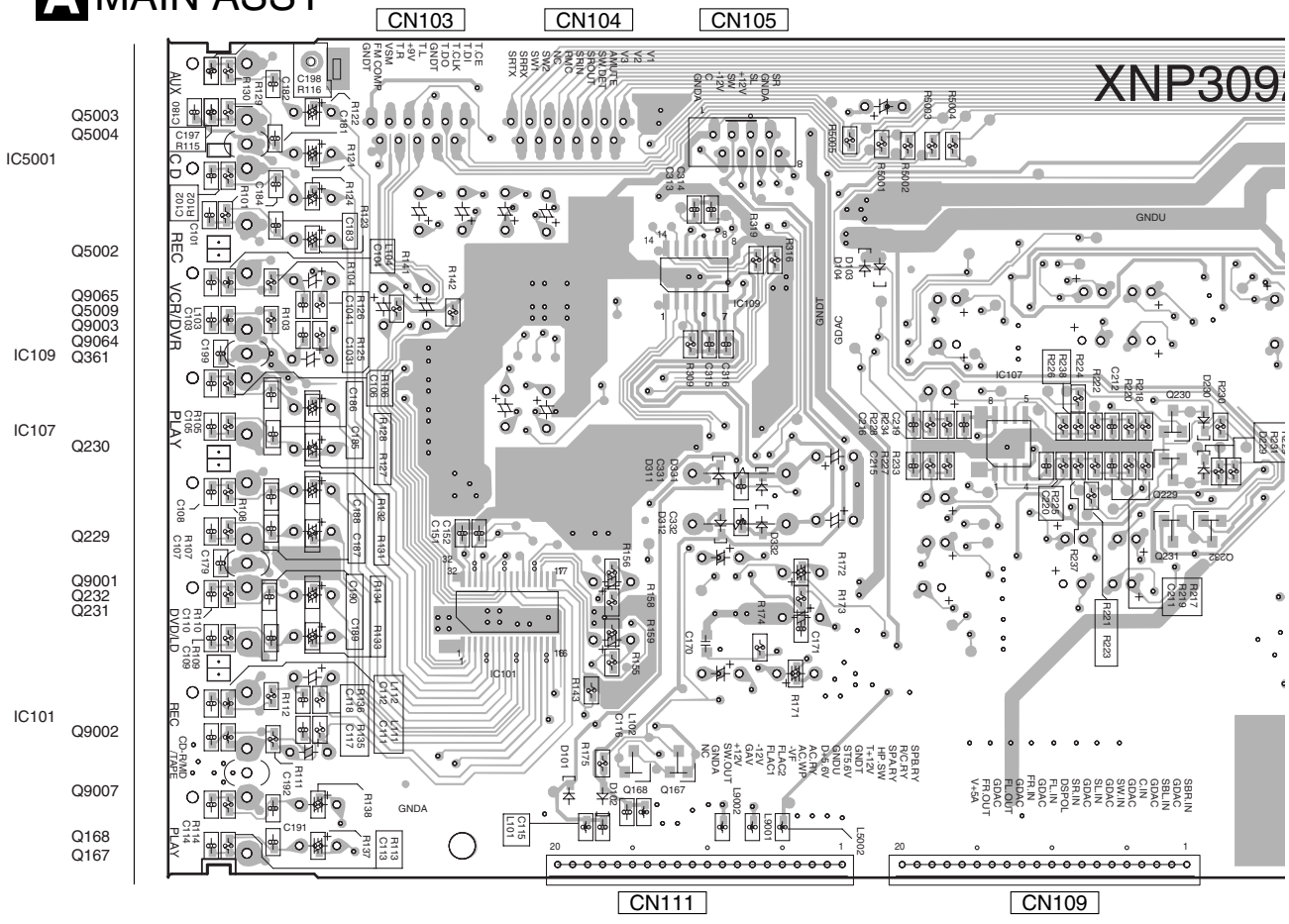


**SIDE A**


FM/AM
TUNER
UNIT
J CN307
I CN303
CN105
CN104
CN103
ASSY
PRODUCTION CODE
F.C.
CN109
CN111
F CN804
F CN802
(XNP3092-B)

**SIDE B**

# A MAIN ASSY



**SIDE B**

A

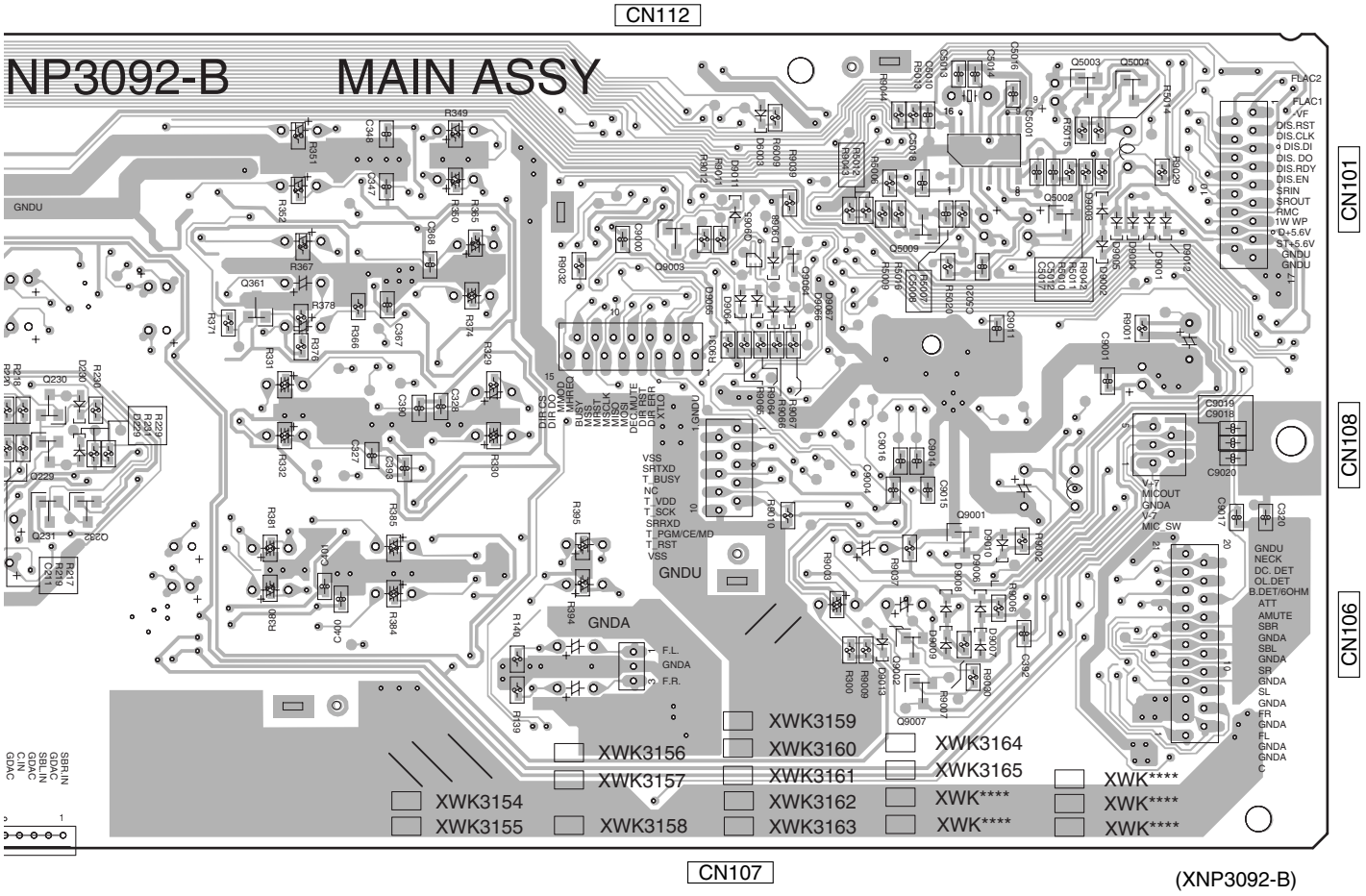
B

C

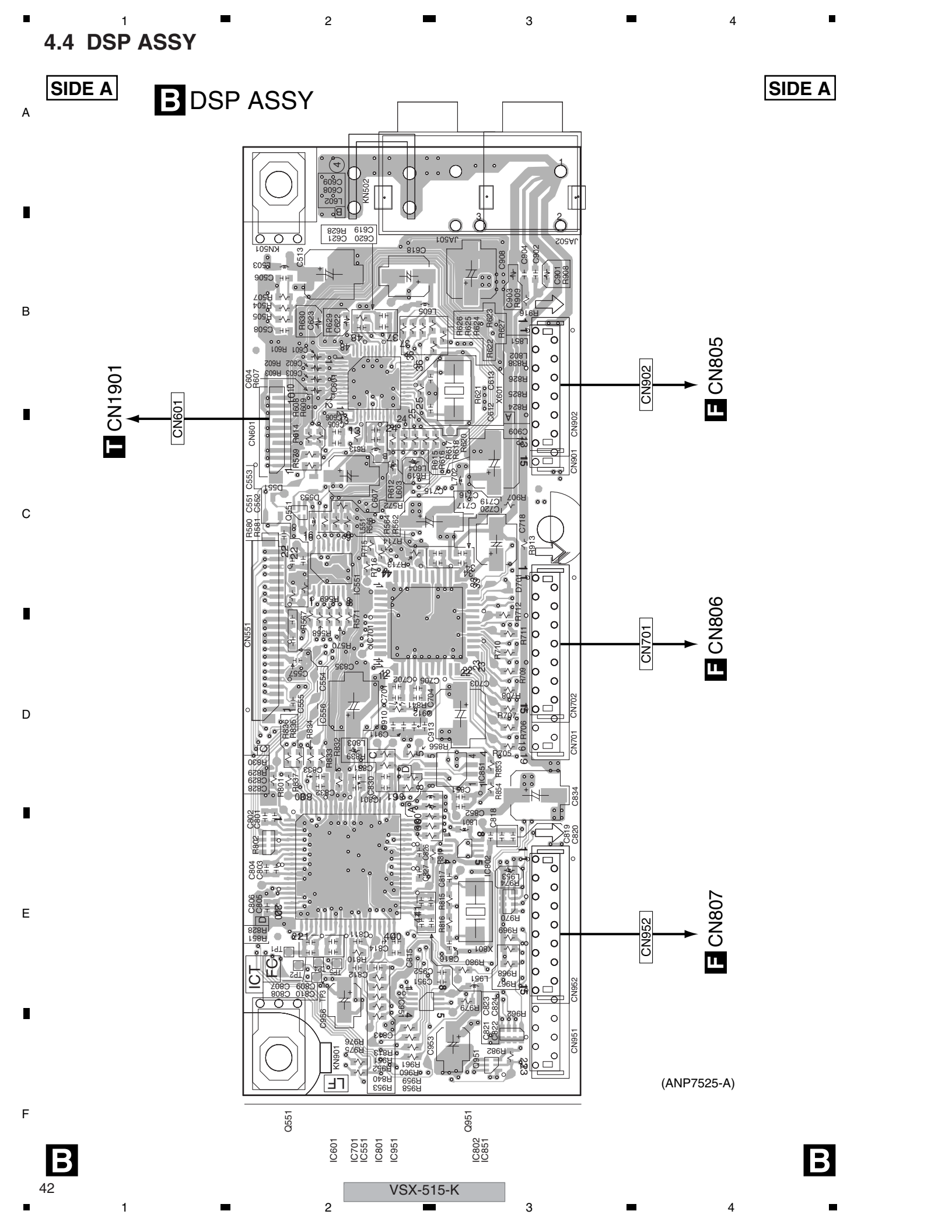
D

E

F



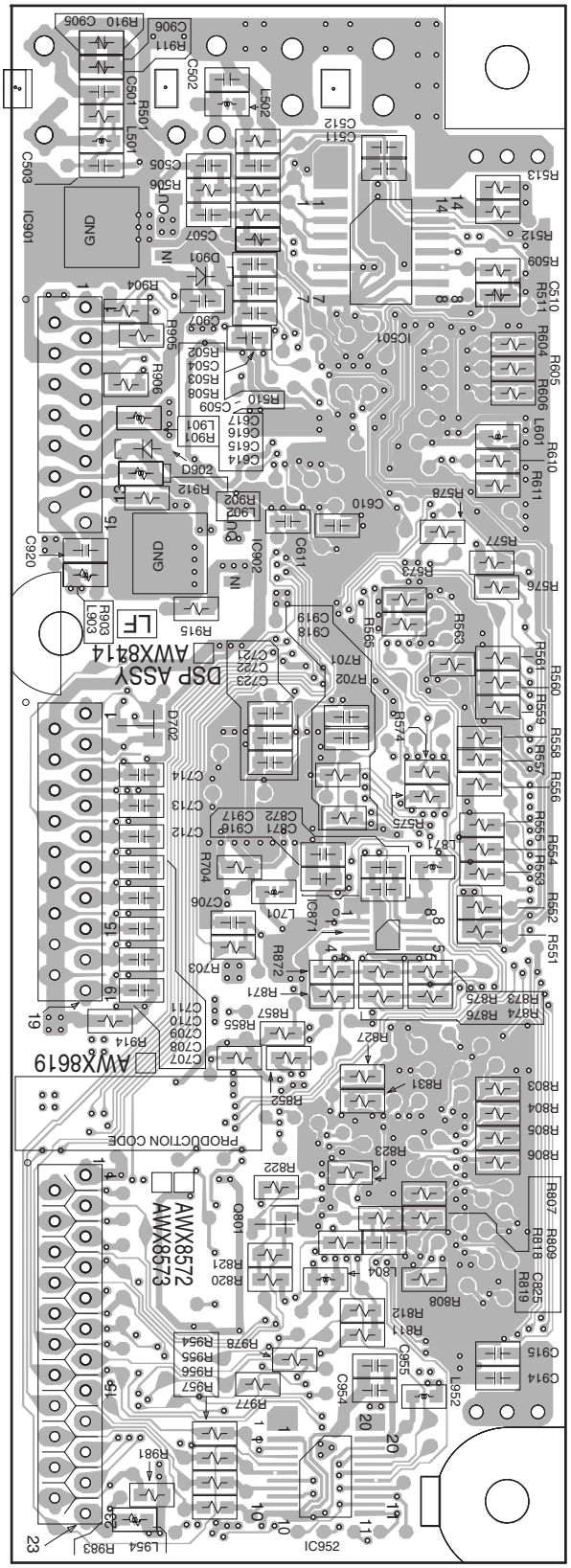
## 4.4 DSP ASSY


SIDE A
B DSP ASSY
SIDE A
T CN1901
CN601
CN902
F CN805
CN701
F CN806
CN952
F CN807
(ANP7525-A)
Q551
Q951
IC601
IC701
IC551
IC801
IC951
IC802
IC851
B
B

**SIDE B**

# B DSP ASSY

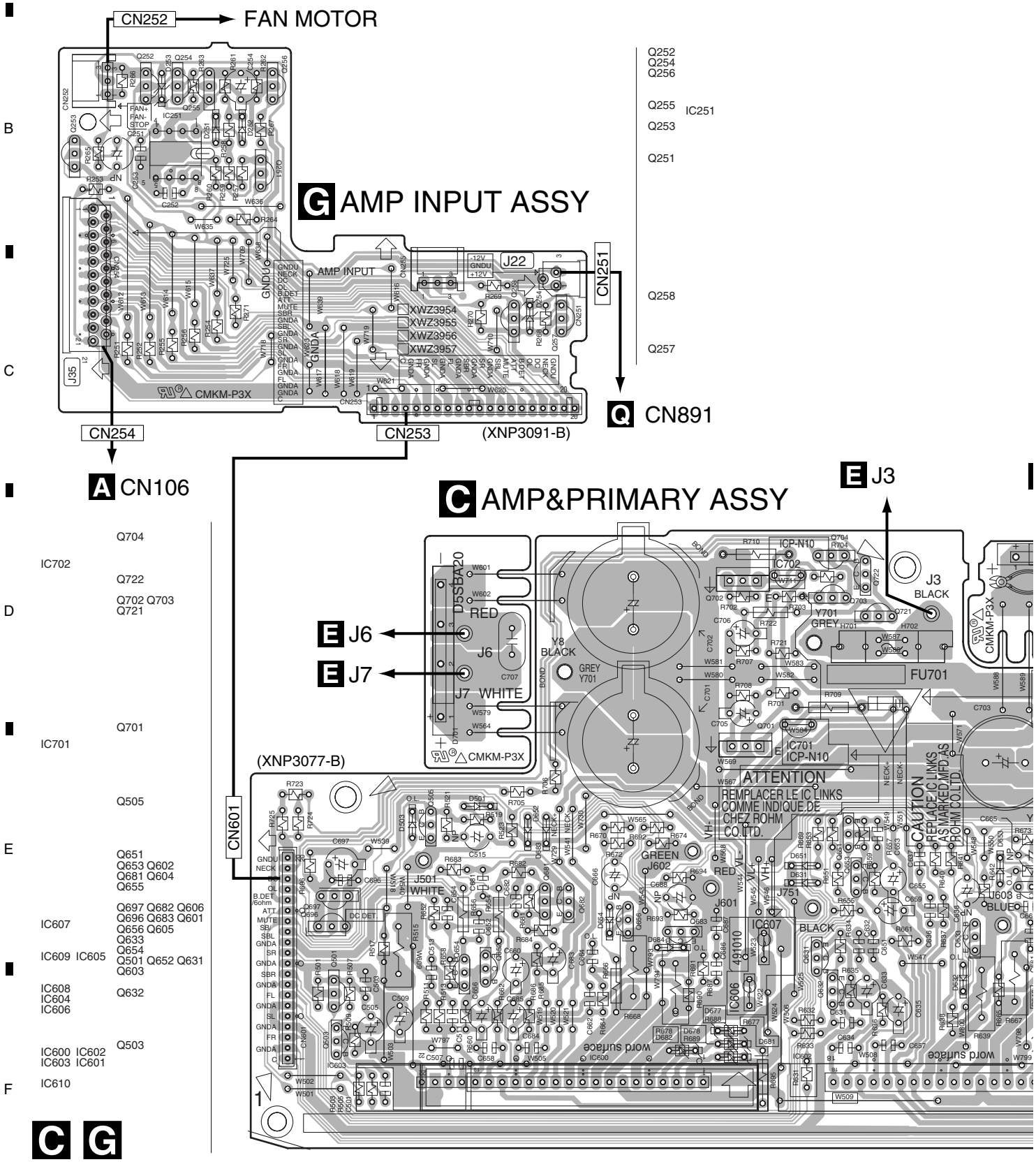
**SIDE B**

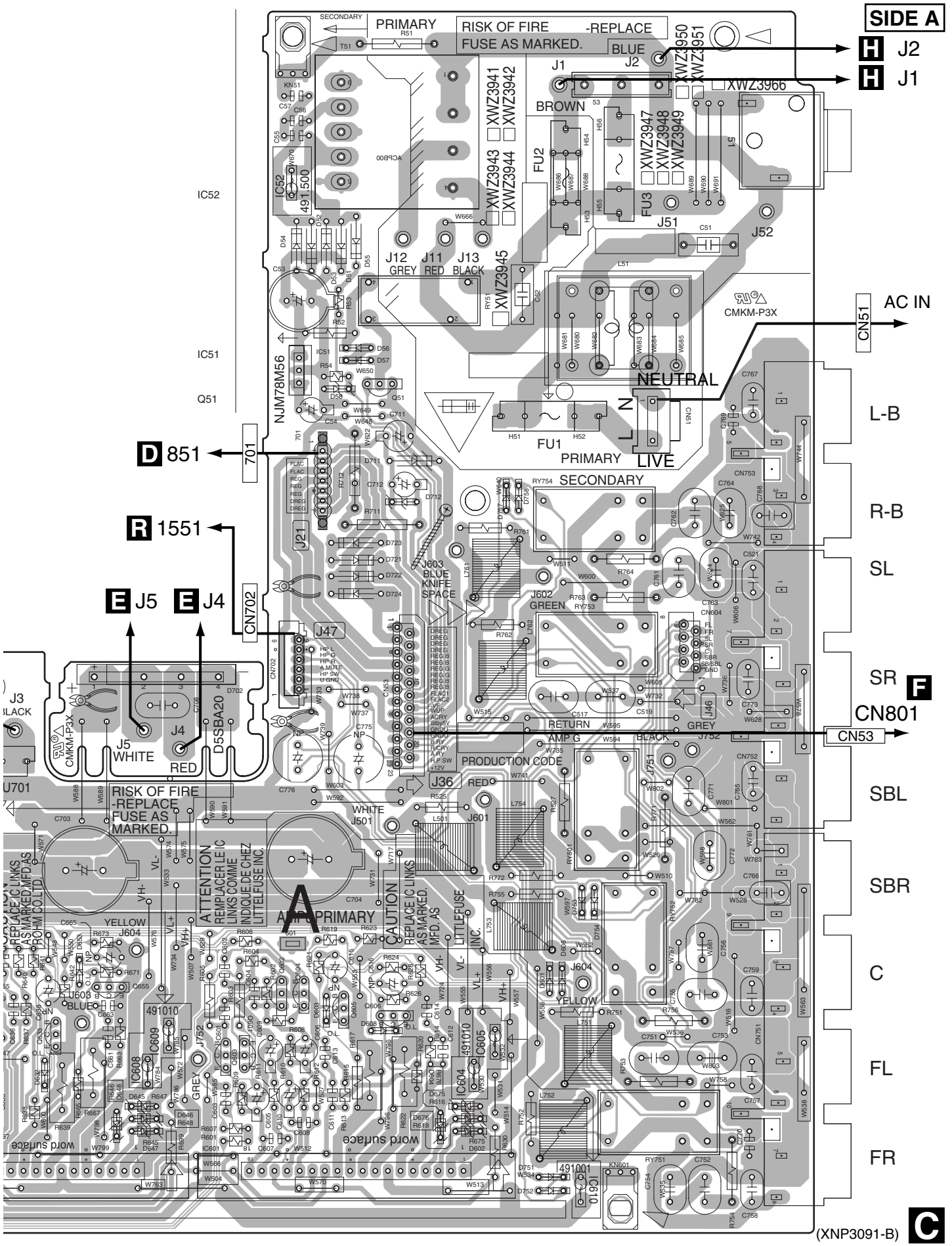



(ANP7525-A)

# 4.5 AMP & PRIMARY and AMP INPUT ASSYS

**SIDE A**

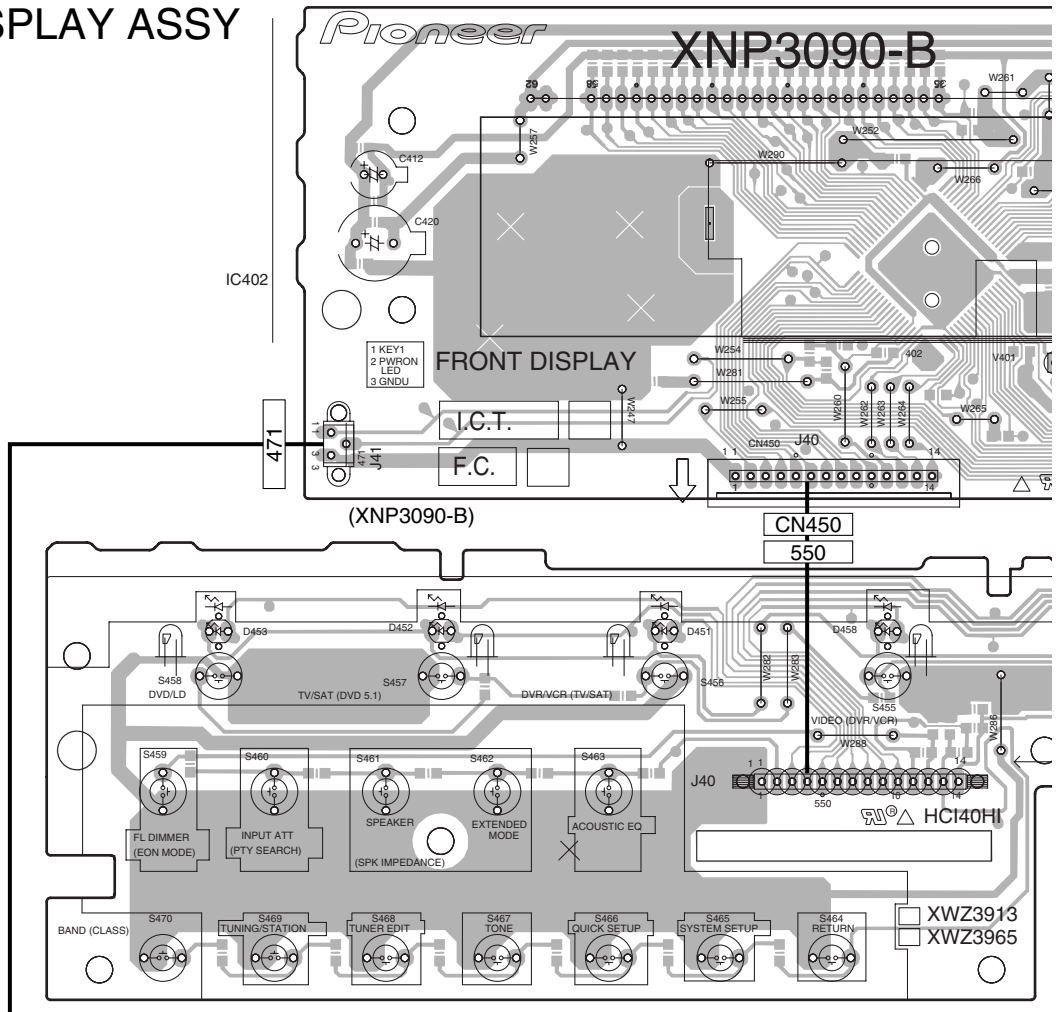



SIDE A
H J2
H J1
AC IN
CN51
CMKM-P3X
NEUTRAL
LIVE
PRIMARY
SECONDARY
FU1
FU2
FU3
D 851
R 1551
E J5
E J4
CN702
CN801
CN53
J5 WHITE
J4 RED
D5SBA20
RISK OF FIRE -REPLACE FUSE AS MARKED.
BLUE
BROWN
GREY
RED
BLACK
YELLOW
WHITE
J1
J2
J51
J52
J12
J11
J13
J3
J36
J46
J47
J501
J601
J602
J603
J604
J731
J752
IC52
IC51
Q51
NJM78M56
491500
491010
491001
XWZ3941
XWZ3942
XWZ3943
XWZ3944
XWZ3945
XWZ3947
XWZ3948
XWZ3949
XWZ3950
XWZ3951
XWZ3966
J603 BLUE KNIFE SPACE
J602 GREEN
PRODUCTION CODE
AMP G
AMP PRIMARY
RETURN
ATTENTION REMPLACER LE IC LINKS COMME INDIQUE DE CHEZ LITTELFUSE INC.
CAUTION REPLACE IC LINKS AS MARKED. MFD. AS LITTELFUSE INC.
word surface
L-B
R-B
SL
SR
SBL
SBR
C
FL
FR
F
(XNP3091-B)
C
VSX-515-K
45

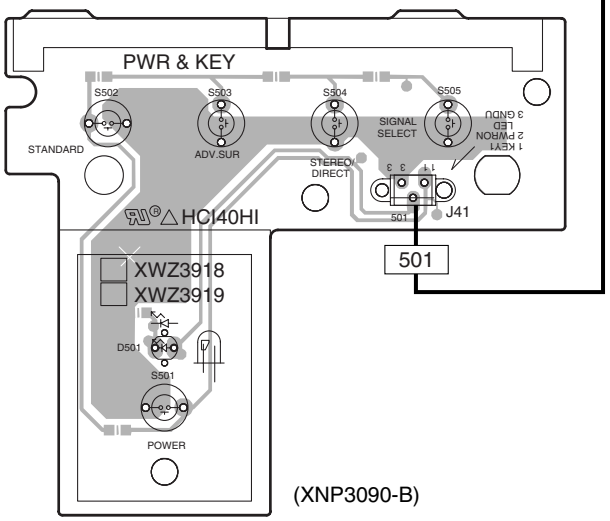
# 4.6 F. DISPLAY, R. ENCODER, P. SW & KEY, H. P. and F. KEY ASSYS

**SIDE A**

## M FRONT DISPLAY ASSY

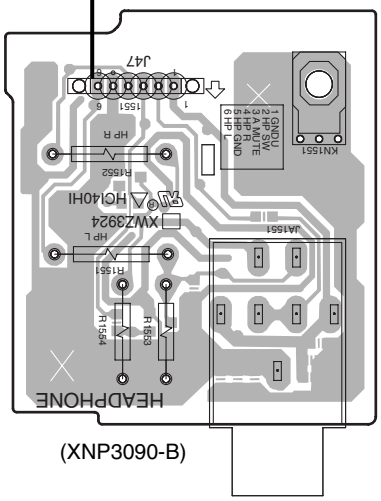



## O POWER SW & KEY ASSY

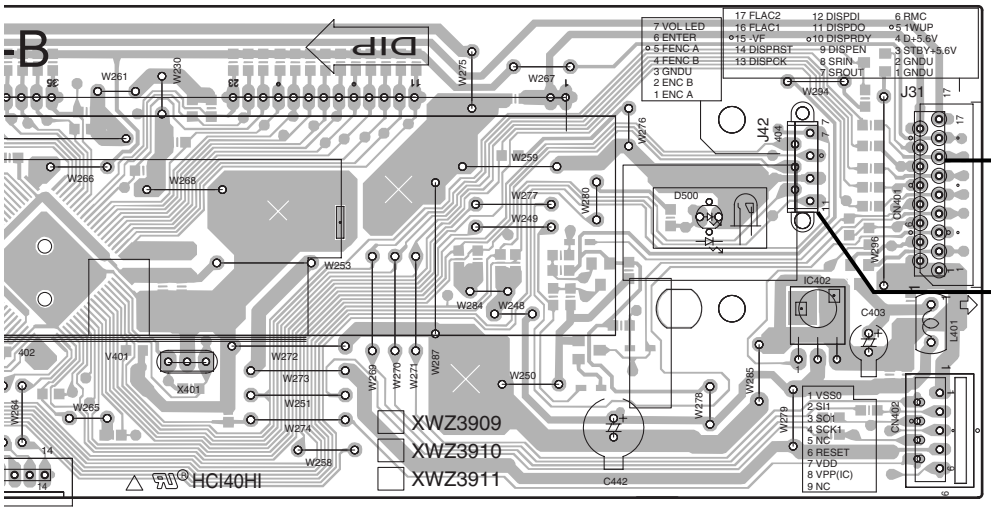


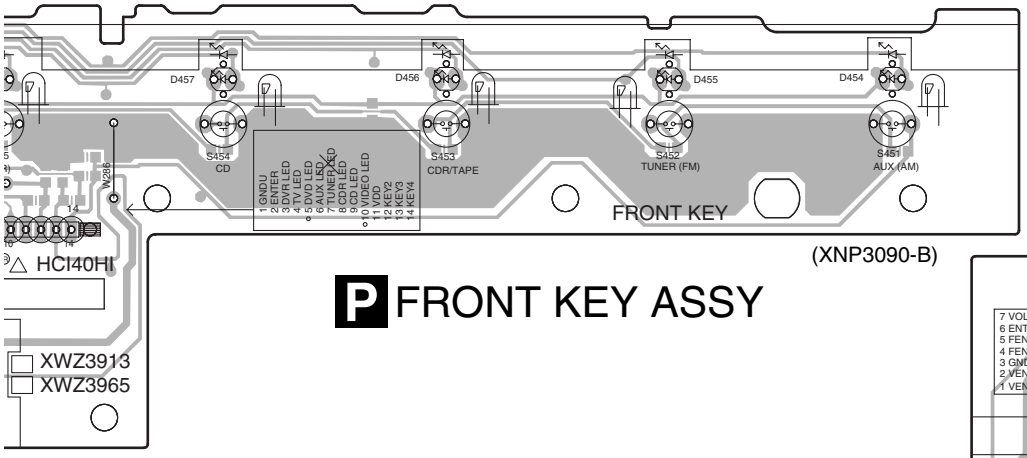

## C CN702

## R H.P ASSY



**SIDE A**

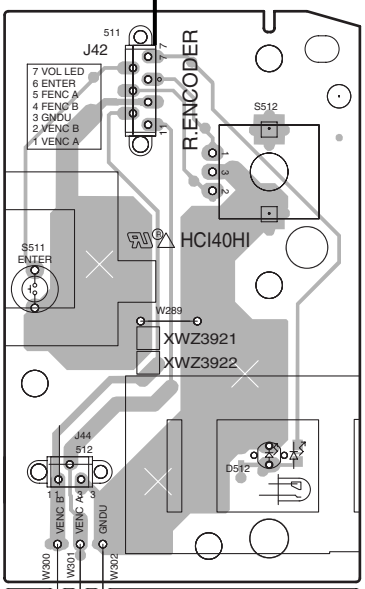


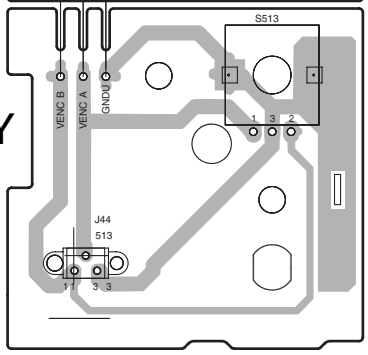




**P** FRONT KEY ASSY

(XNP3090-B)

511



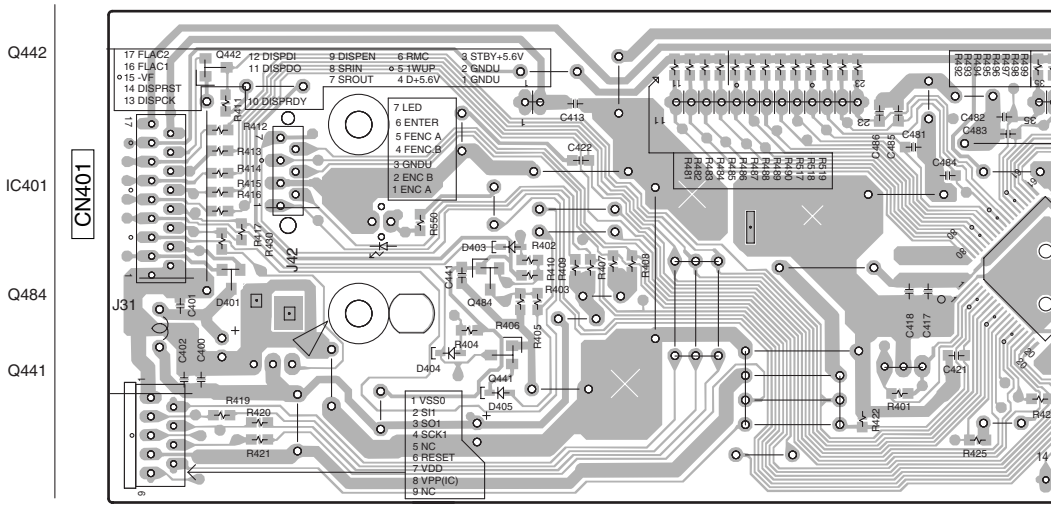

**N** R.ENCODER ASSY

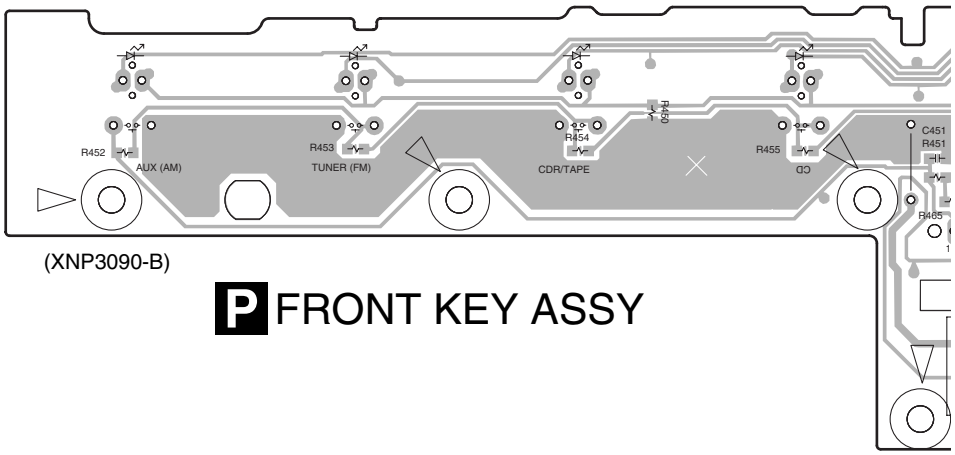
(XNP3090-B)

**M N P**

**SIDE B**

404

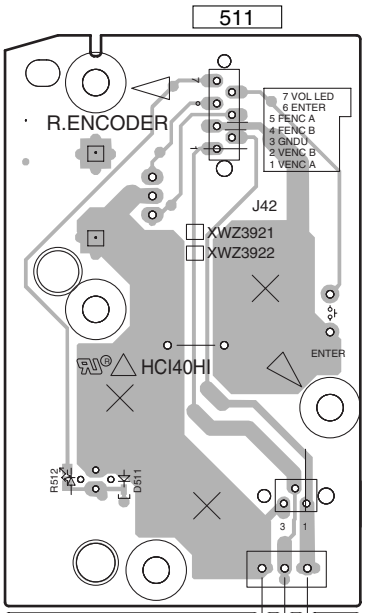


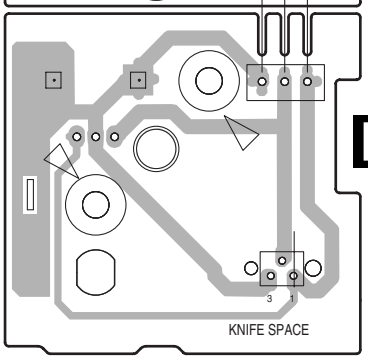




(XNP3090-B)

**P** FRONT KEY ASSY

511



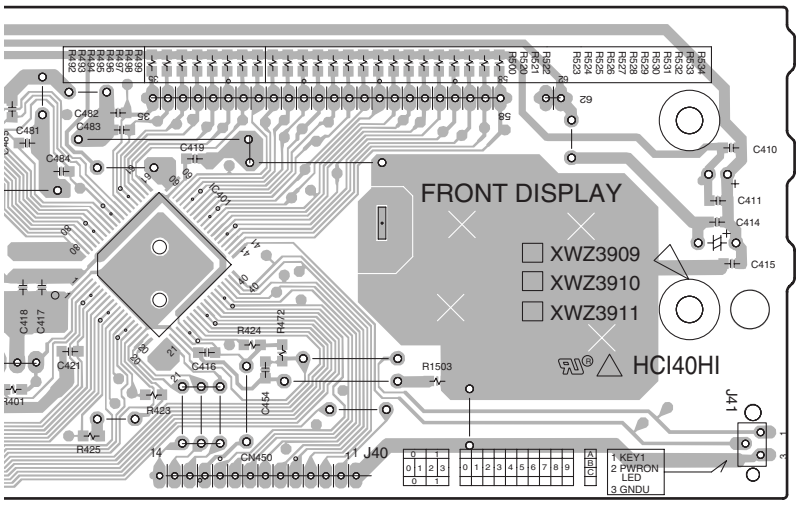

(XNP3090-B)

**N** R.ENCODER ASSY

**M N P**

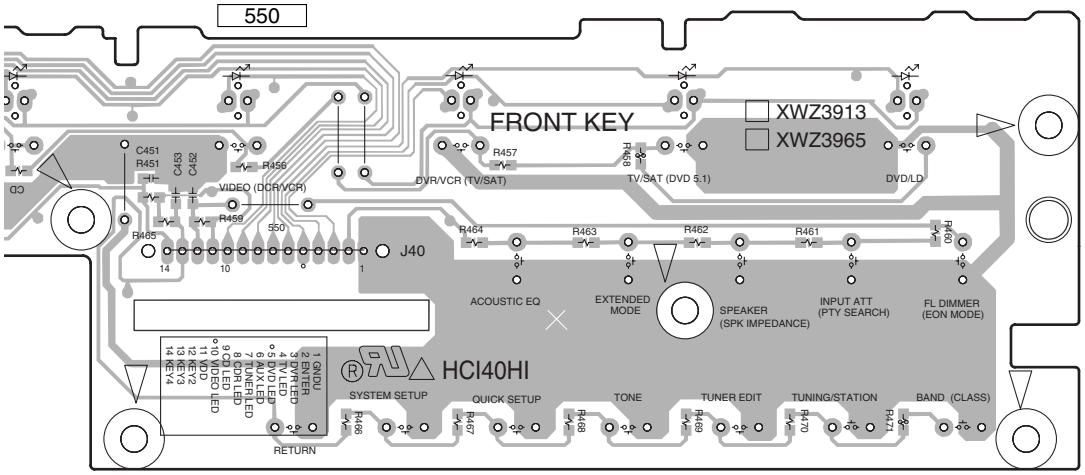
**SIDE B**

## M FRONT DISPLAY ASSY

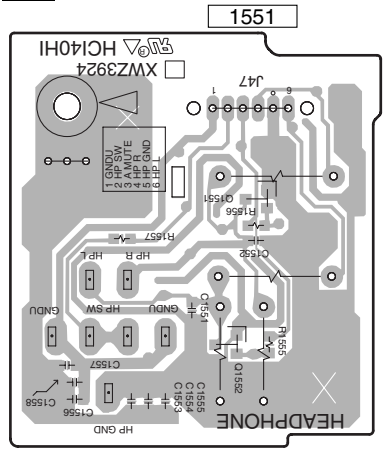



(XNP3090-B)

CN450
550

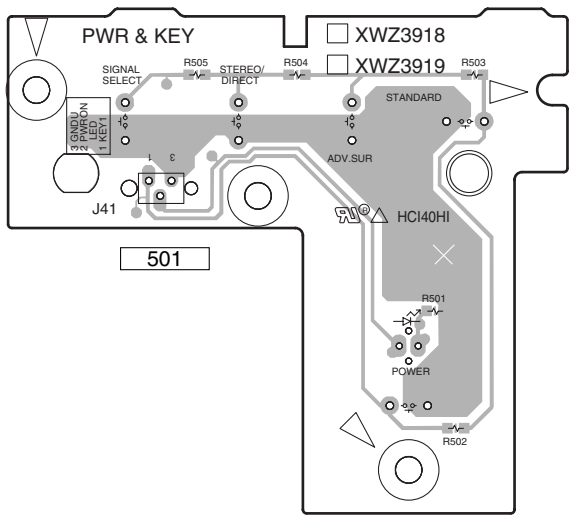



## R H.P ASSY




(XNP3090-B)

## O POWER SW & KEY ASSY

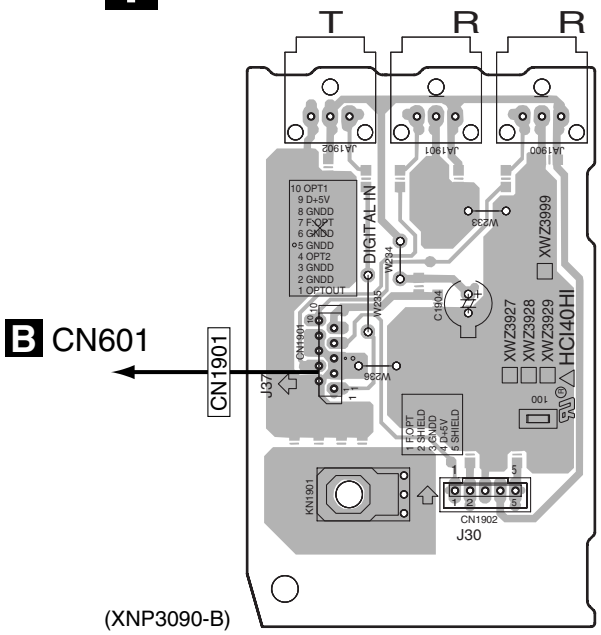



(XNP3090-B)

## 4.7 DIGITAL IN, VIDEO and 5.1CH ASSYS

**SIDE A**

**T** DIGITAL IN ASSY



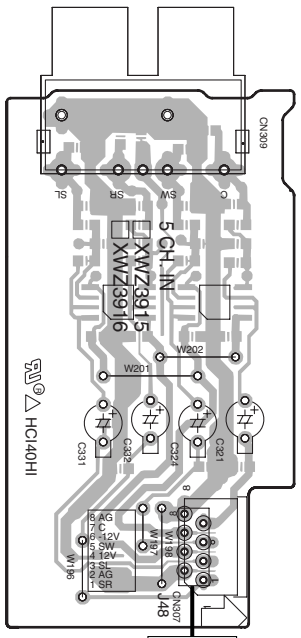

**B** CN601

CN1901

(XNP3090-B)

**J** 5.1CH ASSY

**SIDE A**

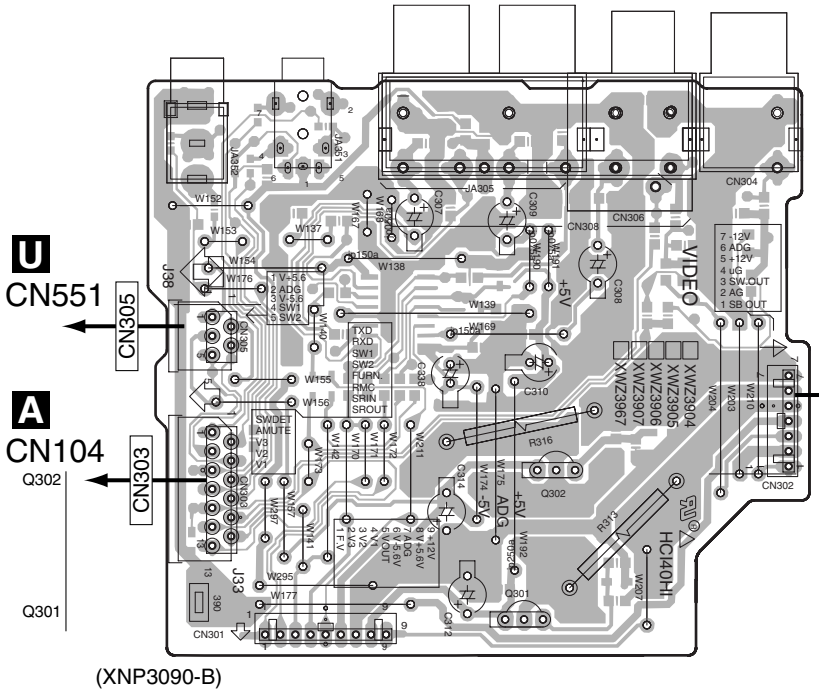



(XNP3090-B)

CN307

**A** CN105

**I** VIDEO ASSY




**U**
CN551

CN305

**A**
CN104

Q302

CN303

Q301

**F** CN803

CN302

(XNP3090-B)

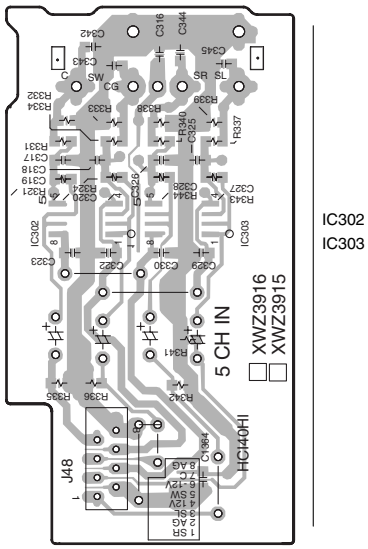
**I J T**

**I J T**

SIDE B

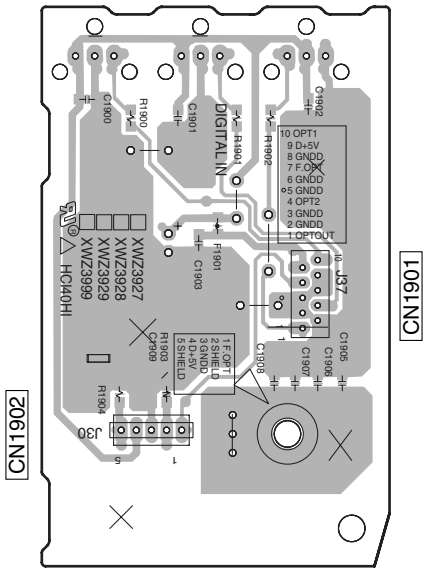
SIDE B

## J 5.1CH ASSY



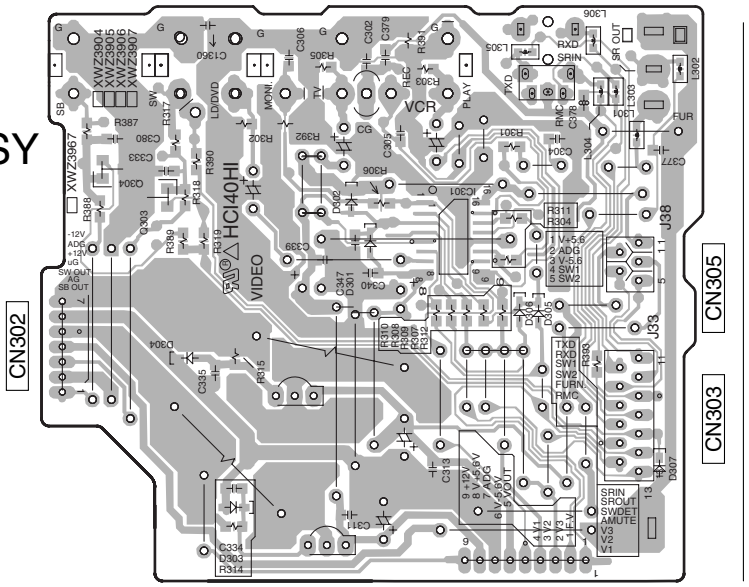

(XNP3090-B)

## T DIGITAL IN ASSY




(XNP3090-B)

## I VIDEO ASSY



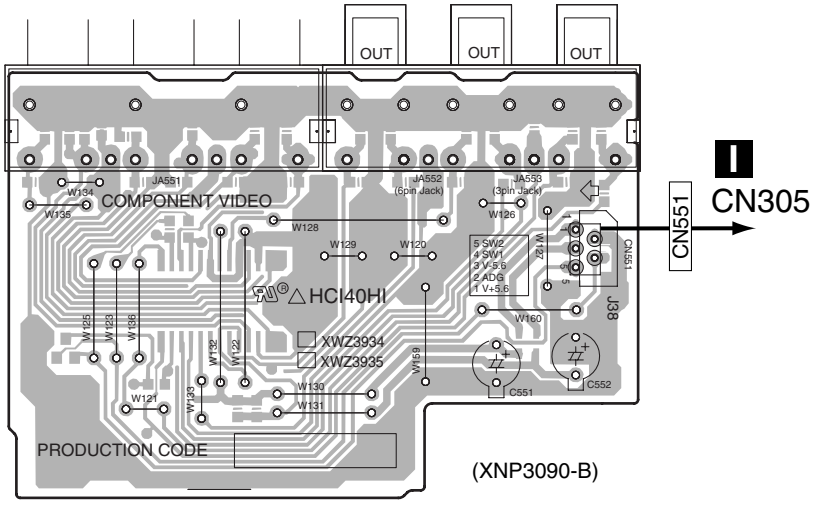

(XNP3090-B)

## 4.8 COMPONENT ASSY

**SIDE A**

**SIDE A**

### U COMPONENT ASSY

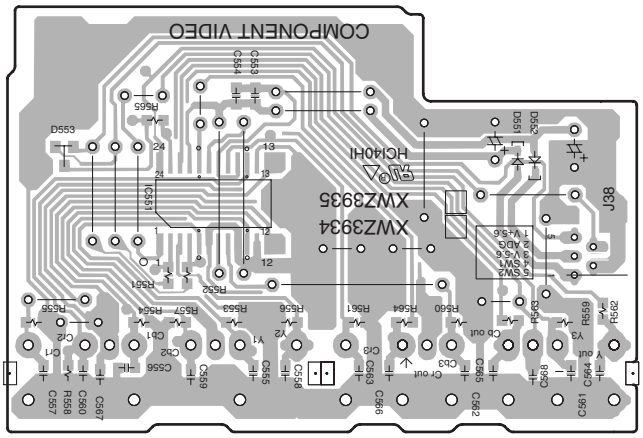



**SIDE B**

**SIDE B**

### U COMPONENT ASSY

IC551




(XNP3090-B)

# 5. ELECTRICAL PARTS LIST

*NOTES:*
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

*Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).*

| | | | |
|---|---|---|---|
| *560 Ω* | → *56 x 10¹* → | *561* | *RD1/4PU 5 6 1 J* |
| *47k Ω* | → *47 x 10³* → | *473* | *RD1/4PU 4 7 3 J* |
| *0.5 Ω* | → *R50* | | *RN2H R 5 0 K* |
| *1 Ω* | → *1R0* | | *RS1P 1 R 0 K* |

*Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).*

| | | | |
|---|---|---|---|
| *5.62k Ω* | → *562 x 10¹* → | *5621* | *RN1/4PC 5 6 2 1 F* |

## LIST OF ASSEMBLIES

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | MAIN ASSY | XWK3154 |
| | 1 | DSP ASSY | AWX8573 |
| NSP | 1 | AMP & PS ASSY | XWK3174 |
| | 2 | AMP & PRIMARY ASSY | XWZ3941 |
| | 2 | REGULATOR ASSY | XWZ3952 |
| | 2 | AMP INPUT ASSY | XWZ3955 |
| | 2 | TRANS1 ASSY | XWZ3958 |
| | 2 | TRANS2 ASSY | XWZ3959 |
| | 2 | TRANS3 ASSY | XWZ3961 |
| | 2 | BINDER ASSY | XWZ3963 |
| | 2 | HOLDER ASSY | XWZ3964 |
| NSP | 1 | COMPLEX ASSY | XWK3167 |
| | 2 | VIDEO ASSY | XWZ3904 |
| | 2 | FRONT DISPLAY ASSY | XWZ3909 |
| | 2 | FRONT KEY ASSY | XWZ3913 |
| | 2 | 5.1CH ASSY | XWZ3915 |
| | 2 | P. SW ASSY | XWZ3918 |
| | 2 | R. ENCODER ASSY | XWZ3921 |
| | 2 | H.P. ASSY | XWZ3924 |
| | 2 | DIGITAL IN ASSY | XWZ3927 |
| | 2 | COMPONENT ASSY | XWZ3934 |
| | 2 | TRANS4 ASSY | XWZ3936 |
| | 1 | FM/AM TUNER UNIT | AXX7172 |

| Mark | No. | Description | Part No. |
|---|---|---|---|

## COMPLEX ASSY

### OTHERS

| | | | |
|---|---|---|---|
| | J41 | JUMPER WIRE | D15A03-110-2651 |
| | J42 | JUMPER WIRE | D15A07-075-2651 |
| | J47 | JUMPER WIRE 6P | D20PYY0630E |
| | J40 | JUMPER WIRE 14P | D20PYY1407E |

## AMP & PS ASSY

### OTHERS

| | | | |
|---|---|---|---|
| | Y701 | AWG14 BOARD IN | ADX7286 |
| | J21 | JUMPER WIRED 7P | D20PYY0715E |

| Mark | No. | Description | Part No. |
|---|---|---|---|

## A MAIN ASSY

### SEMICONDUCTORS

| | | |
|---|---|---|
| | IC109 | BD3812F |
| | IC108 | BD3813KS |
| | IC101 | BD3841FS |
| | IC103–IC107 | HA17558AF |
| | IC102 | NJM2100M |
| | IC9001 | PEG094B |
| | IC110–IC112, IC115 | UPC4570G2 |
| | Q165, Q166, Q321, Q322 | 2SC5938A |
| | Q341, Q342, Q361, Q362, Q388 | 2SC5938A |
| | Q395, Q396 | 2SC5938A |
| | Q5001 | 2SD1664 |
| | Q229, Q230 | 2SK208 |
| | Q167, Q231, Q9002-Q9005 | DTA124EK |
| | Q9008 | DTA143TK |
| | Q232 | DTC124EK |
| | Q168, Q9001 | DTC143EK |
| | Q9007 | DTC143TK |
| | Q9065 | UMD2N |
| | Q9064 | UN5112 |
| | D103–D108, D229, D230, D301 | 1SS355 |
| | D311, D312, D9001-D9013 | 1SS355 |
| | D9064-D9068 | 1SS355 |
| | D101, D102 | RB501V-40 |
| | D5007 | UDZS10(B) |
| | D331, D332 | UDZS6R8(B) |

### COILS AND FILTERS

| | | |
|---|---|---|
| | L9001, L9002 CHIP SOLID INDUCTOR | ATL7002 |
| | L9003 | LFEA2R2J |
| | L101–L104, L111, L112, L5002 CHIP SOLID INDUCTOR | QTL1013 |

### CAPACITORS

| | | |
|---|---|---|
| | C151, C152, C243, C244, C263 | CCSRCH101J50 |
| | C284, C313, C314, C317, C318 | CCSRCH101J50 |
| | C323, C324, C343, C344, C363 | CCSRCH101J50 |
| | C386 | CCSRCH101J50 |
| | C1031, C1041, C117, C118 | CCSRCH220J50 |
| | C205–C208, C245–C248, C265 | CCSRCH331J50 |
| | C267, C286, C288 | CCSRCH331J50 |
| | C203, C204 | CCSRCH471J50 |
| | C366 | CEANP4R7M50 |
| | C123–C128, C131–C138 | CEAT100M50 |
| | C141, C142, C167, C168 | CEAT100M50 |
| | C209, C210, C213, C214 | CEAT100M50 |
| | C249, C250, C269, C270, C290 | CEAT100M50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C301–C306, C321, C322 | | CEAT100M50 |
| | C341, C342, C361, C362, C380 | | CEAT100M50 |
| | C384 | | CEAT100M50 |
| | C5007 | | CEAT101M16 |
| | C169 | | CEAT221M6R3 |
| | C201, C202, C241, C242 | | CEAT2R2M50 |
| | C261, C262, C282, C9005 | | CEAT2R2M50 |
| | C9007 | | CEAT331M6R3 |
| | C325, C326, C345, C346, C365 | | CEAT470M25 |
| | C388 | | CEAT470M25 |
| | C155, C156 | | CEAT470M50 |
| | C333, C334 | | CEAT471M10 |
| | C9013 | | CEAT471M6R3 |
| | C165, C166, C370 | | CEAT4R7M50 |
| | C170 | | CKSQYB104K16 |
| | C320, C392, C5001, C9015, C9016 | | CKSRYB102K50 |
| | C115, C116, C153, C154, C171 | | CKSRYB103K50 |
| | C179, C180, C199, C215–C218 | | CKSRYB103K50 |
| | C251, C252, C266, C271, C272 | | CKSRYB103K50 |
| | C291, C292, C315, C316, C319 | | CKSRYB103K50 |
| | C327–C330, C347, C348 | | CKSRYB103K50 |
| | C367, C368, C390, C393, C5002 | | CKSRYB103K50 |
| | C9004, C9008, C9017 | | CKSRYB103K50 |
| | C219, C220, C309–C312, C9018 | | CKSRYB104K16 |
| | C5003, C9006 | | CKSRYB105K10 |
| | C264 | | CKSRYB223K25 |
| | C257, C258, C277, C278, C298 | | CKSRYB472K50 |
| | C307, C308, C364 | | CKSRYB472K50 |
| | C9011, C9014 | | CKSRYB473K16 |
| | C268 | | CKSRYB562K50 |
| | C391 | | CKSRYF104Z16 |
| | C9003 (1F/5.5V) | | PCH1132 |

**RESISTORS**

| | | |
|---|---|---|
| ⚠ | R311, R312 | RS1LMF101J |
| | Other Resistors | RS1/16S###J |

**OTHERS**

| | | |
|---|---|---|
| | CN105 8P CONNECTOR | 52044-0845 |
| | CN103 11P CONNECTOR | 52044-1145 |
| | CN104 13P CONNECTOR | 52044-1345 |
| | CN102 10P CONNECTOR | 52045-1045 |
| | CN112 15P CONNECTOR | 52045-1545 |
| | CN101 17P CONNECTOR | 52045-1745 |
| | CN106 21P CONNECTOR | 52045-2145 |
| | CN109, CN111 20P SOCKET | KP200TA20L |
| | 105 PCB BINDER | VEF1040 |
| | JA103, JA104 PIN JACK (4P) | XKB3017 |
| | JA105 PIN JACK (6P) | XKB3037 |
| | X9001 CERAMIC RESONATOR (15.7 MHz) | XSS3004 |

## B DSP ASSY

**SEMICONDUCTORS**

| | | |
|---|---|---|
| | IC601 | AK4114VQ |
| | IC701 | AK4628VQE |
| | IC801 | DSPC56371AF180 |
| ⚠ | IC902 | LM1117DT-ADJ |
| ⚠ | IC901 | NJM2391DL1-33 |
| | IC501 | TC74HCU04AF |
| | IC952 | TC74VHCT244AFTS1 |
| | IC871 | TC7WH125FU |
| | IC802 | TC7WU04FU |
| | D702 | DAN202K |
| | D701 | DAP202K |
| | D901, D902 | UDZS5R6(B) |

**COILS AND FILTERS**

| | | |
|---|---|---|
| | L802, L803 | ATL7002 |
| | L901, L902 CHIP SOLID INDUCTOR | ATL7002 |
| | L501–L503, L601, L602, L605 | QTL1013 |
| | L701, L702, L801, L804, L871 | QTL1013 |
| | L952 CHIP SOLID INDUCTOR | QTL1013 |

**CAPACITORS**

| | | |
|---|---|---|
| | C705 | CCSRCH101J50 |
| | C612, C613 | CCSRCH120J50 |
| | C505, C506 | CCSRCH470J50 |
| | C511, C605, C608, C620, C702 | CCSRCH471J50 |
| | C707–C714, C717, C801, C803 | CCSRCH471J50 |
| | C805, C807, C809, C814, C818 | CCSRCH471J50 |
| | C821, C823, C826, C828, C830 | CCSRCH471J50 |
| | C832, C871, C916, C919, C954 | CCSRCH471J50 |
| | C816, C817 | CCSRCH8R0D50 |
| | C956 | CEVW100M16 |
| | C513, C703, C715, C834, C835 | CEVW101M16 |
| | C908, C909 | CEVW101M16 |
| | C607, C618, C718 | CEVW470M6R3 |
| | C617 | CKSRYB102K50 |
| | C503, C504, C701, C820, C825 | CKSRYB103K50 |
| | C917 | CKSRYB103K50 |
| | C606, C609, C614, C619, C704 | CKSRYB104K16 |
| | C706, C716, C720, C802, C804 | CKSRYB104K16 |
| | C806, C808, C810, C815, C819 | CKSRYB104K16 |
| | C822, C824, C827, C829, C831 | CKSRYB104K16 |
| | C833, C872, C907, C918, C955 | CKSRYB104K16 |
| | C512 | CKSRYB105K6R3 |
| | C621 | CKSRYB474K10 |

**RESISTORS**

| | | |
|---|---|---|
| | R802 | RAB4C101J |
| | R962, R970 | RAB4C104J |
| | R628 | RS1/16S1802F |
| | Other Resistors | RS1/16S###J |

**OTHERS**

| | | |
|---|---|---|
| | JA501 2P PIN JACK | AKB7131 |
| | CN601 10P CONNECTOR | VKN1414 |
| | CN902 13P SOCKET | XKP3077 |
| | CN952 15P SOCKET | XKP3078 |
| | CN701 19P SOCKET | XKP3080 |
| | X601 CRYSTAL RESONATOR (12.288 MHz) | ASS7046 |
| | X801 CRYSTAL RESONATOR (20 MHz) | VSS1171 |

## C AMP & PRIMARY ASSY

**SEMICONDUCTORS**

| | | |
|---|---|---|
| ⚠ | IC610 PROTECTOR(1A) | AEK7009 |
| ⚠ | IC604–IC609 PROTECTOR(10A) | AEK7022 |
| ⚠ | IC701, IC702 IC PROTECTOR | ICP-N10 |
| ⚠ | IC51 | NJM78M56FA |
| ⚠ | IC600–IC602 POWER PACK 2CH | STK412-230B |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | Q703, Q721 | | 2SA1145 |
| ⚠ | Q702 | | 2SA2005 |
| | Q696, Q697 | | 2SC1740S |
| | Q704, Q722 | | 2SC1845 |
| | Q605, Q606, Q633, Q655, Q656 | | 2SC2240 |
| | Q683 | | 2SC2240 |
| ⚠ | Q701 | | 2SC5511 |
| | Q601–Q604, Q631, Q632 | | 2SC5974A |
| | Q651–Q654, Q681, Q682 | | 2SC5974A |
| | Q51 | | DTC143ES |
| | D56, D601, D603, D606, D608 | | 1SS133 |
| | D631, D632, D651–D654 | | 1SS133 |
| | D683, D684, D752, D754 | | 1SS133 |
| ⚠ | D701, D702 | | D5SBA20(B) |
| | D602, D604, D647, D648 | | MTZJ15A |
| | D681, D682 | | MTZJ15A |
| | D711 | | MTZJ22D |
| | D58 | | MTZJ5.1B |
| | D712 | | MTZJ6R8(B) |
| ⚠ | D51–D55, D721–D724 | | S5688 |
| **COILS AND FILTERS** | | | |
| | L751–L754, L761, L762 | COIL | ATH1004 |
| ⚠ | L51 | LINE FILTER | XTF3004 |
| **SWITCHES AND RELAYS** | | | |
| | RY751–RY753 | RELAY | XSR3009 |
| ⚠ | RY51 | RELAY | XSR3010 |
| **CAPACITORS** | | | |
| | C707, C708 (0.01/AC250V) | | ACG1005 |
| | C607, C608, C611–C614, C634 | | CCPUSL470J50 |
| | C636, C637, C657, C658 | | CCPUSL470J50 |
| | C661–C664, C684, C686, C687 | | CCPUSL470J50 |
| | C615, C616, C638, C665, C666 | | CEANP2R2M50 |
| | C688 | | CEANP2R2M50 |
| | C775, C776 | | CEANP470M50 |
| | C712 | | CEAT101M10 |
| | C609, C610, C635, C659, C660 | | CEAT101M16 |
| | C685 | | CEAT101M16 |
| | C711 | | CEAT101M35 |
| | C53 | | CEAT102M16 |
| | C697 | | CEAT221M10 |
| | C54 | | CEAT470M25 |
| | C605, C606, C633, C655, C656 | | CEAT4R7M50 |
| | C683 | | CEAT4R7M50 |
| | C705, C706 | | CEHAT100M2A |
| | C696 | | CKPUYB102K50 |
| | C603, C604, C632, C653, C654 | | CKPUYB331K50 |
| | C682 | | CKPUYB331K50 |
| | C55 | | –C57CKPUYF103Z25 |
| | C751, C752, C755, C761, C762 | | CQMBA104J50 |
| | C771 | | CQMBA104J50 |
| ⚠ | C51, C52 (10000pF/250V(AC)) | | XCG3009 |
| | C703, C704 (3300/42V) | | XCH3012 |
| | C701, C702 (5600/71V) | | XCH3025 |
| **RESISTORS** | | | |
| ⚠ | R617, R622, R639, R667, R668 | | ACN7094 |
| ⚠ | R691 (0.22/5W) | | ACN7094 |
| ⚠ | R51 (2.2M/ 1/2W) | | RCN1080 |
| ⚠ | R52 | | RD1/2PM270J |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | R615, R620, R638, R665, R666 | | RD1/4PU331J |
| ⚠ | R690 | | RD1/4PU331J |
| ⚠ | R751, R752, R755, R761, R762 | | RD1/4PUF101J |
| ⚠ | R772 | | RD1/4PUF101J |
| ⚠ | R709, R710 | | RS1LMF472J |
| ⚠ | R753, R754, R756, R763, R764 | | RS1LMF4R7J |
| ⚠ | R771 | | RS1LMF4R7J |
| ⚠ | R711 | | RS2LMF242J |
| | Other Resistors | | RD1/4PU###J |
| **OTHERS** | | | |
| | CN53 | 23P CONNECTOR | 52045-2345 |
| | CN702 | 6P JUMPER CONNECTOR | 52147-0610 |
| ⚠ | 51 | AC SOCKET 1-P | AKP1060 |
| | H51, H52, H701, H702 | FUSE CLIP | AKR7001 |
| ⚠ | T51 | STANDBY TRANSFORMER | ATT7043 |
| | CN601 | 20P PLUG | KM200TA20 |
| ⚠ | CN51 | AC CODE SOCKET | RKP1751 |
| | 601 | PCB BINDER | VEF1040 |
| | KN51, KN601 | EARTH METAL FITTING | VNF1084 |
| | CN751 | SP TERMINAL 8-P(V0) | XKE3030 |
| | CN752 | SP TERMINAL 6-P(V0) | XKE3032 |
| | 701 | 7P CABLE HOLDER | XKP3047 |

## D TRANS2 ASSY

**SEMICONDUCTORS**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | IC853 | PROTECTOR (4A) | AEK7018 |
| ⚠ | IC851, IC852 | PROTECTOR (5A) | AEK7019 |
| **OTHERS** | | | |
| | 851 | 7P CABLE HOLDER | XKP3047 |

## E TRANS3 ASSY

TRANS3 ASSY has no service part.

## F REGULATOR ASSY

**SEMICONDUCTORS**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | IC803, IC804 | | NJM78M05FA |
| ⚠ | IC801, IC805 | | NJM78M12FA |
| ⚠ | IC806 | | NJM78M56FA |
| ⚠ | IC802 | | NJM79M12FA |
| | Q801, Q803 | | DTA124ES |
| | Q802, Q804 | | DTC114ES |
| | D809–D811 | | MTZJ6.2B |
| ⚠ | D801–D804 | | S5688G |
| **CAPACITORS** | | | |
| | C811, C815 | | CEAT101M10 |
| | C813 | | CEAT101M16 |
| | C801, C802 | | CEAT222M25 |
| | C809 | | CEAT472M16 |
| | C808 | | CEHAT101M10 |
| | C805, C806 | | CEHAT101M16 |
| | C803, C804, C807, C810, C812 | | CKPUYF103Z25 |
| | C814 | | CKPUYF103Z25 |
| **RESISTORS** | | | |
| ⚠ | R801 | | RS3LMF331J |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | **OTHERS** | |
| | CN808 | 15P CONNECTOR | 52045-1545 |
| A | CN801 | 23P CONNECTOR | 52045-2345 |
| | CN802, CN804 | 20P PLUG | KM200TA20 |
| | CN803 | 7P PLUG | KM200TA7 |
| | CN805 | 13P PLUG | XKP3066 |
| | CN807 | 15P PLUG | XKP3067 |
| | CN806 | 19P PLUG | XKP3069 |

## G AMP INPUT ASSY

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | **SEMICONDUCTORS** | |
| | IC251 | | NJM4558D-D |
| B | Q257 | | 2SA933S |
| | Q251, Q256 | | 2SC5974A |
| | Q252 | | 2SD1858X |
| | Q254 | | DTA124ES |
| | Q253, Q255 | | DTC124ES |
| | D251, D252 | | 1SS133 |
| | D253 | | MTZJ27D |
| | D254 | | MTZJ5.1B |
| | | **CAPACITORS** | |
| | C251 | | CEANP470M25 |
| C | C254 | | CEAT101M25 |
| | C252, C253 | | CKPUYF103Z25 |
| | | **RESISTORS** | |
| | All Resistors | | RD1/4PU###J |
| | | **OTHERS** | |
| | CN251 | 3P CONNECTOR | 52044-0345 |
| | CN254 | 21P CONNECTOR | 52044-2145 |
| | CN253 | 20P SOCKET | KP200TA20L |
| | CN252 | 3PIN CONNECTOR | S3B-EH |

D

## H TRANS1 ASSY

TRANS1 ASSY has no service part.

## I VIDEO ASSY

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | **SEMICONDUCTORS** | |
| | IC301 | | NJM2595M |
| | Q302 | | 2SA1515 |
| | Q301 | | 2SC3377 |
| | Q303 | | 2SC5938A |
| E | D301, D302, D305, D306 | | 1SS355 |
| | D307 | | UDZS5R1(B) |
| | D303, D304 | | UDZS6R2(B) |
| | | **CAPACITORS** | |
| | C347 | | CCSRCH470J50 |
| | C307–C310, C312, C314, C338 | | CEAT470M25 |
| | C1360, C302 | | CKSRYB103K50 |
| | C339, C340 | | CKSRYB104K25 |
| | C304–C306 | | CKSRYB221K50 |
| | C333 | | CKSRYB331K50 |
| F | C311, C313 | | CKSRYB473K25 |
| | | **RESISTORS** | |
| | ⚠ R313, R316 | | RS3LMF390J |
| | Other Resistors | | RS1/16S###J |
| | | **OTHERS** | |
| | CN305 | 5P CONNECTOR | 52044-0545 |
| | CN303 | 13P CONNECTOR | 52044-1345 |
| | JA305 | PIN JACK(4P)YELLOW | AKB7100 |
| | CN302 | 7P SOCKET | KP200TA7L |
| | 390 | PCB BINDER | VEF1040 |
| | CN306 | 2P PIN JACK | XKB3041 |

## J 5.1CH ASSY

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | **CAPACITORS** | |
| | C342–C345 | | CCSRCH101J50 |
| | C321, C324, C331, C332 | | CEAT4R7M50 |
| | C1364 | | CKSRYB102K50 |
| | C316 | | CKSRYB103K50 |
| | C317, C318, C325, C326 | | CKSRYB221K50 |
| | | **RESISTORS** | |
| | All Resistors | | RS1/16S###J |
| | | **OTHERS** | |
| | CN307 | 8P CONNECTOR | 52044-0845 |
| | CN309 | PIN JACK (4P) | XKB3035 |

## M FRONT DISPLAY ASSY

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | **SEMICONDUCTORS** | |
| | IC402 | | GP1UM27XK0VF |
| | IC401 | | PE5487A |
| | Q484 | | 2SA1037K |
| | Q442 | | DTC124EK |
| | D403 | | 1SS355 |
| | D401 | | DAN202K |
| | | **COILS AND FILTERS** | |
| | L401 | | LFEA2R2J |
| | | **CAPACITORS** | |
| | C482, C483 | | CCSRCH221J50 |
| | C481 | | CCSRCH471J50 |
| | C442 | | CEAL470M10 |
| | C403 | | CEAT221M6R3 |
| | C412 | | CEAT470M50 |
| | C415, C454 | | CKSRYB102K50 |
| | C401, C402, C410, C411, C419 | | CKSRYB103K50 |
| | C441 | | CKSRYB103K50 |
| | C418, C421 | | CKSRYB104K16 |
| | C420 (220uF/35V) | | XCH3011 |
| | | **RESISTORS** | |
| | All Resistors | | RS1/16S###J |
| | | **OTHERS** | |
| | 471 | CABLE HOLDER (3P) | 51063-0305 |
| | 404 | CABLE HOLDER (7P) | 51063-0705 |
| | CN401 | 17P CONNECTOR | 52044-1745 |
| | CN402 | 9P CONNECTOR | 52492-0920 |
| | V401 | FL TUBE | XAV3025 |
| | X401 | CERAMIC RESONATOR (5 MHz) | VSS1142 |

| Mark | No. | Description | Part No. |
|---|---|---|---|

## N R.ENCODER ASSY

### SWITCHES AND RELAYS

| | | |
|---|---|---|
| | S511 | SWITCH | VSG1024 |
| | S513 | ROTARY ENCODER | XSX3005 |
| | S512 | ROTARY ENCODER | XSX3006 |

### OTHERS

| | | |
|---|---|---|
| | 511 | CABLE HOLDER (7P) | 51063-0705 |

## O POWER SW & KEY ASSY

### SWITCHES AND RELAYS

| | | |
|---|---|---|
| | S501–S505 | SWITCH | VSG1024 |

### RESISTORS

| | | |
|---|---|---|
| | All Resistors | | RS1/16S###J |

### OTHERS

| | | |
|---|---|---|
| | 501 | CABLE HOLDER (3P) | 51063-0305 |

## P FRONTER KEY ASSY

### SWITCHES AND RELAYS

| | | |
|---|---|---|
| | S451–S470 | SWITCH | VSG1024 |

### CAPACITORS

| | | |
|---|---|---|
| | C451–C453 | | CKSRYB102K50 |

### RESISTORS

| | | |
|---|---|---|
| | All Resistors | | RS1/16S###J |

## Q TRANS4 ASSY

### SEMICONDUCTORS

| | | |
|---|---|---|
| ⚠ | IC891, IC892 | PROTECTOR (800mA) | AEK7008 |
| ⚠ | D891 | | S1WB(A)60SD |

### CAPACITORS

| | | |
|---|---|---|
| | C891, C892 | | CEAT471M35 |

### OTHERS

| | | |
|---|---|---|
| | CN891 | 3P CONNECTOR | 52045-0345 |

## R H.P. ASSY

### SEMICONDUCTORS

| | | |
|---|---|---|
| | Q1551, Q1552 | | 2SC5938A |

### CAPACITORS

| | | |
|---|---|---|
| | C1554, C1557 | | CCSRCH471J50 |
| | C1553, C1556 | | CKSRYB103K50 |
| | C1555, C1558 | | CKSRYB104K16 |
| | C1551, C1552 | | CKSRYB223K50 |

### RESISTORS

| | | |
|---|---|---|
| ⚠ | R1553, R1554 | RS1LMF151J |
| ⚠ | R1551, R1552 | RS2LMF331J |
| | Other Resistors | RS1/16S###J |

### OTHERS

| | | |
|---|---|---|
| | 1551 | 6P CABLE HOLDER | 51048-0600 |
| | JA1551 | HEADPHONE JACK | RKB1014 |
| | KN1551 | EARTH METAL FITTING | VNF1084 |

| Mark | No. | Description | Part No. |
|---|---|---|---|

## T DIGITAL INPUT ASSY

### COILS AND FILTERS

| | | |
|---|---|---|
| | F1901 | CHIP BEAD | DTF1067 |

### CAPACITORS

| | | |
|---|---|---|
| | C1907 | | CCSRCH101J50 |
| | C1904 | | CEAL101M10 |
| | C1908 | | CKSRYB102K50 |
| | C1903, C1906 | | CKSRYB103K50 |
| | C1900, C1905 | | CKSRYB104K25 |

### RESISTORS

| | | |
|---|---|---|
| | All Resistors | RS1/16S###J |

### OTHERS

| | | |
|---|---|---|
| | JA1900 | OPT. LINK IN | GP1FAV51RKBF |
| | 100 | PCB BINDER | VEF1040 |
| | CN1901 | 10P CONNECTOR | VKN1186 |
| | KN1901 | WRAPPING TERMINAL | VNF1084 |

## U COMPONENT VIDEO ASSY

### SEMICONDUCTORS

| | | |
|---|---|---|
| | IC551 | | NJM2586AM |
| | D551, D552 | | 1SS355 |
| | D553 | | DAN202K |

### CAPACITORS

| | | |
|---|---|---|
| | C551, C552 | | CEAT101M10 |
| | C567, C568 | | CKSRYB103K50 |
| | C553, C554 | | CKSRYB473K50 |

### RESISTORS

| | | |
|---|---|---|
| | All Resistors | RS1/16S###J |

### OTHERS

| | | |
|---|---|---|
| | CN551 | 5P CONNECTOR | 52045-0545 |
| | JA553 | 3P RCA PINJACK | AKB7124 |
| | JA551 | 6P RCA PINJACK | XKB3025 |

## X FM/AM TUNER UNIT

FM/AM TUNER UNIT has no service part.

# 6. ADJUSTMENT

There is no information to be shown in this chapter.

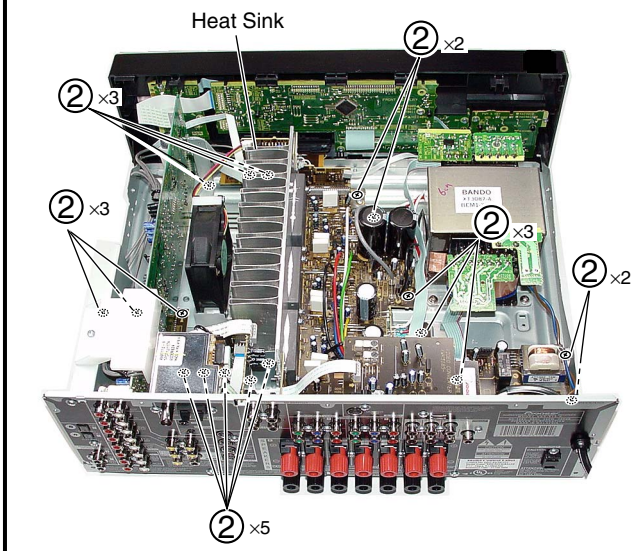
# 7. GENERAL INFORMATION

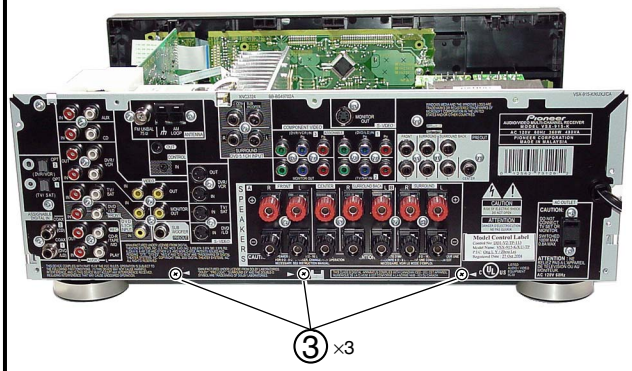
## 7.1 DIAGNOSIS

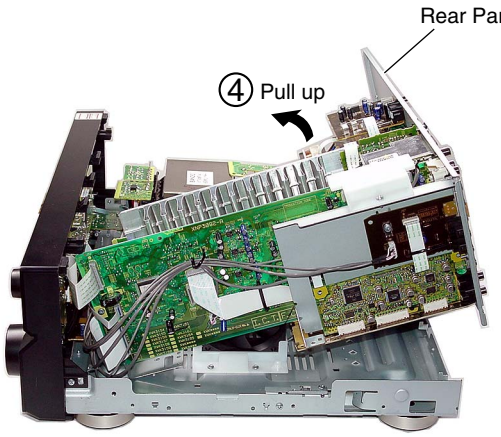
### 7.1.1 DISASSEMBLY

**Note:** Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

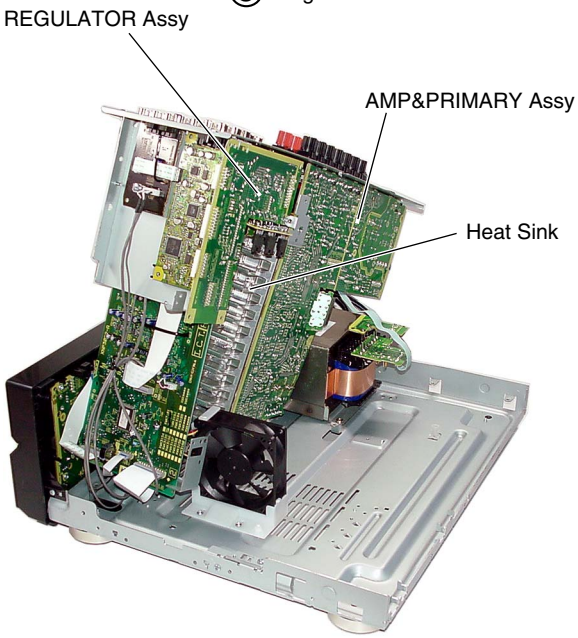
① Remove the top cover (seven screws).



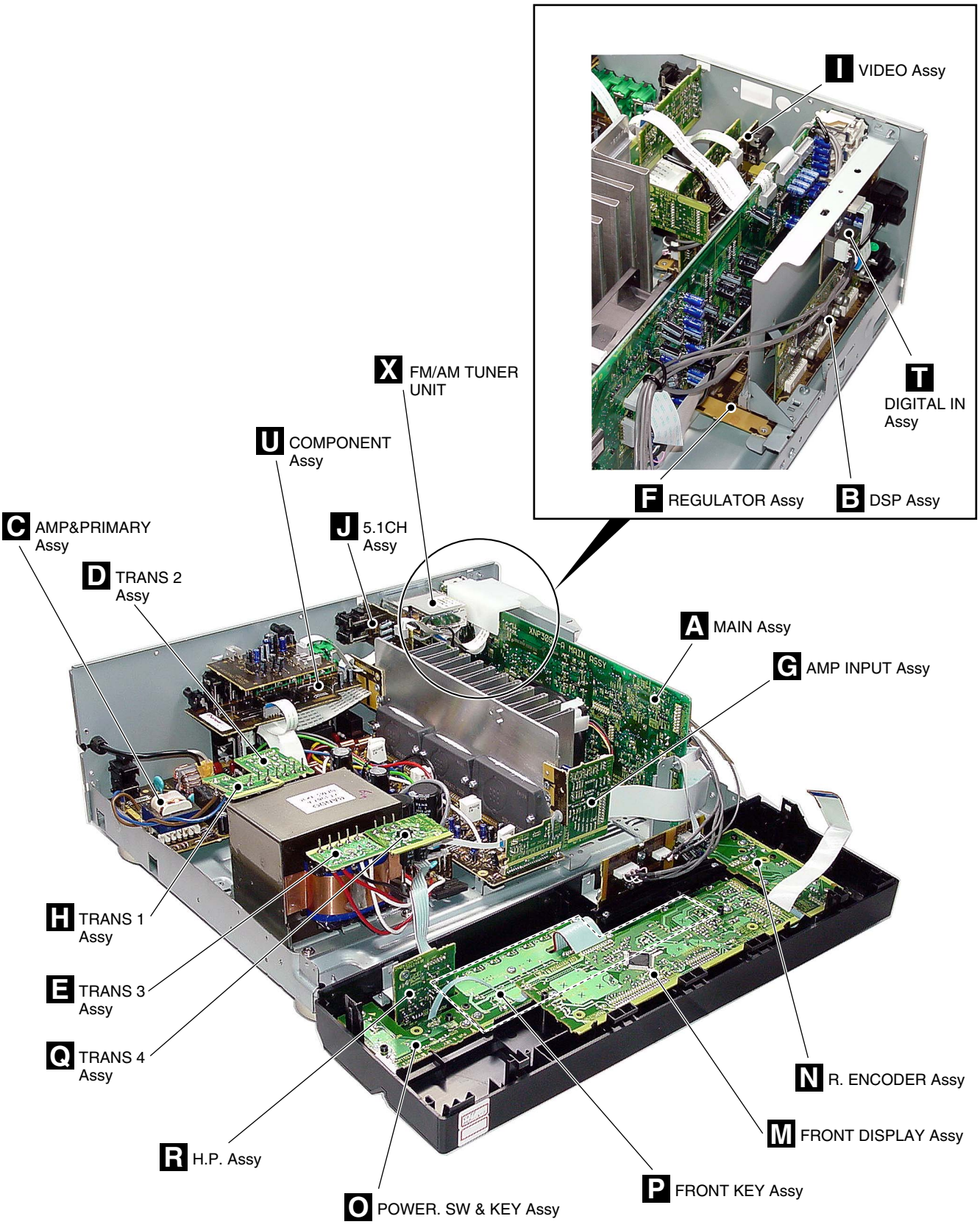




⑤ Diagnosis




Note : The unit does not operate when the screws of Speaker Terminal are taken off from Rear Panel.

**Heat-sink caution in the disassembling** : Because Heat-sink becomes hot, please pay attention.




NOTE : This photograph is VSX-915-K.

# 7.2 PARTS
## 7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

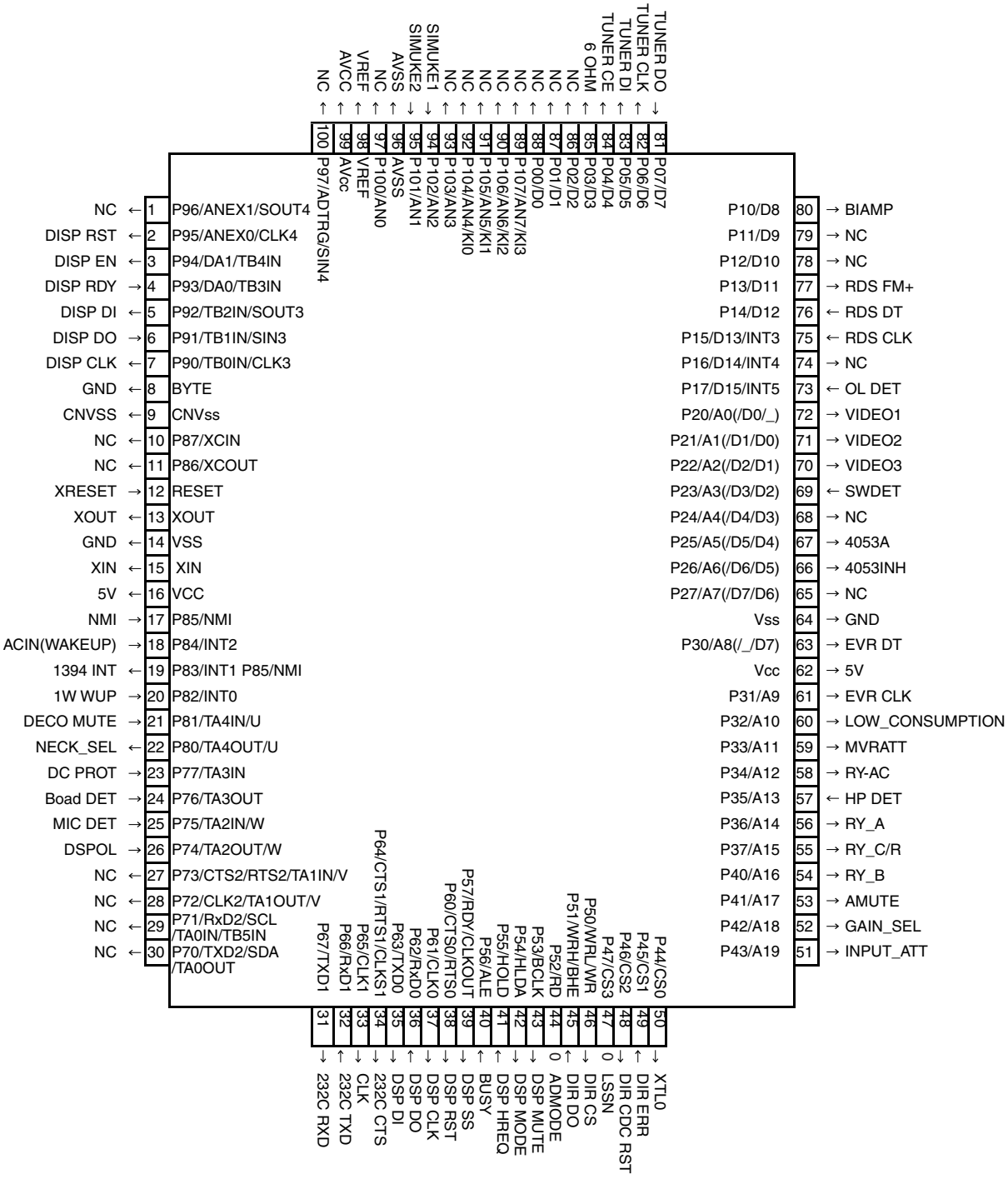
**• List of IC**

PEG094B, PE5487A

## ■ PEG094B (MAIN ASSY : IC9001)

**• System Control MCU**

**■ Pin Arrangement (Top View)**



## • Pin Function

| No. | Port | Pin Name | I/O | Pin Function |
|---|---|---|---|---|
| 1 | P96/ANEX1/SOUT4 | NC | I/O | |
| 2 | P95/ANEX0/CLK4 | DISP RST | I/O | Reset signal to display u-com |
| 3 | P94/DA1/TB4IN | DISP EN | I/O | Enable signal to display u-com |
| 4 | P93/DA0/TB3IN | DISP RDY | I/O | Ready signal from display u-com |
| 5 | P92/TB2IN/SOUT3 | DISP DI | I/O | Data out to display u-com |
| 6 | P91/TB1IN/SIN3 | DISP DO | I/O | Data input from display u-com |
| 7 | P90/TB0IN/CLK3 | DISP CLK | I/O | Clock signal to display u-com |
| 8 | BYTE | GND | | |
| 9 | CNVss | CNVSS | | |
| 10 | P87/XCIN | NC | I/O | |
| 11 | P86/XCOUT | NC | I/O | |
| 12 | RESET | XRESET | | |
| 13 | XOUT | XOUT | | |
| 14 | VSS | GND | | |
| 15 | XIN | XIN | | |
| 16 | VCC | 5V | | |
| 17 | P85/NMI | NM | I | No use |
| 18 | P84/INT2 | ACIN(WAKEUP) | I/O | AC pulse input |
| 19 | P83/INT1 P85/NMI | 1394 INT | I/O | No use (Standby for 1394) |
| 20 | P82/INT0 | 1W WUP | I/O | Wake up signal from display u-com |
| 21 | P81/TA4IN/U | DECO MUTE | I/O | 1st DSP detect port |
| 22 | P80/TA4OUT/U | NECK_SEL | I/O | 5.1ch, surround mode and A+B Stereo : H / Stereo : L |
| 23 | P77/TA3IN | DC PROT | I/O | AMP DC detect |
| 24 | P76/TA3OUT | Boad DET | I/O | AMP INPUT ASSY detect, H : detected |
| 25 | P75/TA2IN/W | MIC DET | I/O | MIC detect (VSX-D914 only), L : detect |
| 26 | P74/TA2OUT/W | DSP OL | I/O | ANALOG OVER LOAD detect, H : detected |
| 27 | P73/CTS2/RTS2/TA1IN/V | NC(1394 CS) | I/O | No use (Standby for 1394) |
| 28 | P72/CLK2/TA1OUT/V | NC(1394 CK) | I/O | No use (Standby for 1394) |
| 29 | P71/RxD2/SCL/TA0IN/TB5IN | NC(1394 DO) | I/O | No use (Standby for 1394) |
| 30 | P70/TXD2/SDA/TA0OUT | NC(1394 DI) | I/O | No use (Standby for 1394) |
| 31 | P67/TXD1 | 232C RXD | I/O | For rewriting 232C (Data output) |
| 32 | P66/RxD1 | 232C TXD | I/O | For rewriting 232C (Data input) |
| 33 | P65/CLK1 | CLK | I/O | It is necessary when writing for JIG |
| 34 | P64/CTS1/RTS1/CLKS1 | 232C CTS | I/O | For rewriting 232C (Admit communication) |
| 35 | P63/TXD0 | DSP DI | I/O | Data output signal for communication with DSP and DIR |
| 36 | P62/RxD0 | DSP DO | I/O | Data input signal for communication with DSP |
| 37 | P61/CLK0 | DSP CLK | I/O | Clock signal for communication with DSP and DIR |
| 38 | P60/CTS0/RTS0 | DSP RST | I/O | Reset signal for DSP |
| 39 | P57/RDY/CLKOUT | DSP SS | I/O | Srobe select signal to DSP |
| 40 | P56/ALE | BUSY | I/O | Use it in MCACC |
| 41 | P55/HOLD | DSP HREQ | I/O | DSP error detect signal |
| 42 | P54/HLDA | DSP MODE | I/O | Mode select of DSP (ROM/RAM) |
| 43 | P53/BCLK | DSP MUTE | I/O | DSP ASSY mute |
| 44 | P52/RD | ADMODE | 0 | DSP ASSY |
| 45 | P51/WRH/BHE | DIR DO | I/O | Data input signal for communication with DIR/DAC |
| 46 | P50/WRL/WR | DIR CS | I/O | Chip select signal for communication with DIR/DAC |
| 47 | P47/CS3 | LSSN | 0 | DSP ASSY |
| 48 | P46/CS2 | DIR CDC RST | I/O | Reset signal for DIR CODEC |
| 49 | P45/CS1 | DIR ERR | I/O | lock/unlock signal |
| 50 | P44/CS0 | XTL0 | I/O | DIR X'tal change |

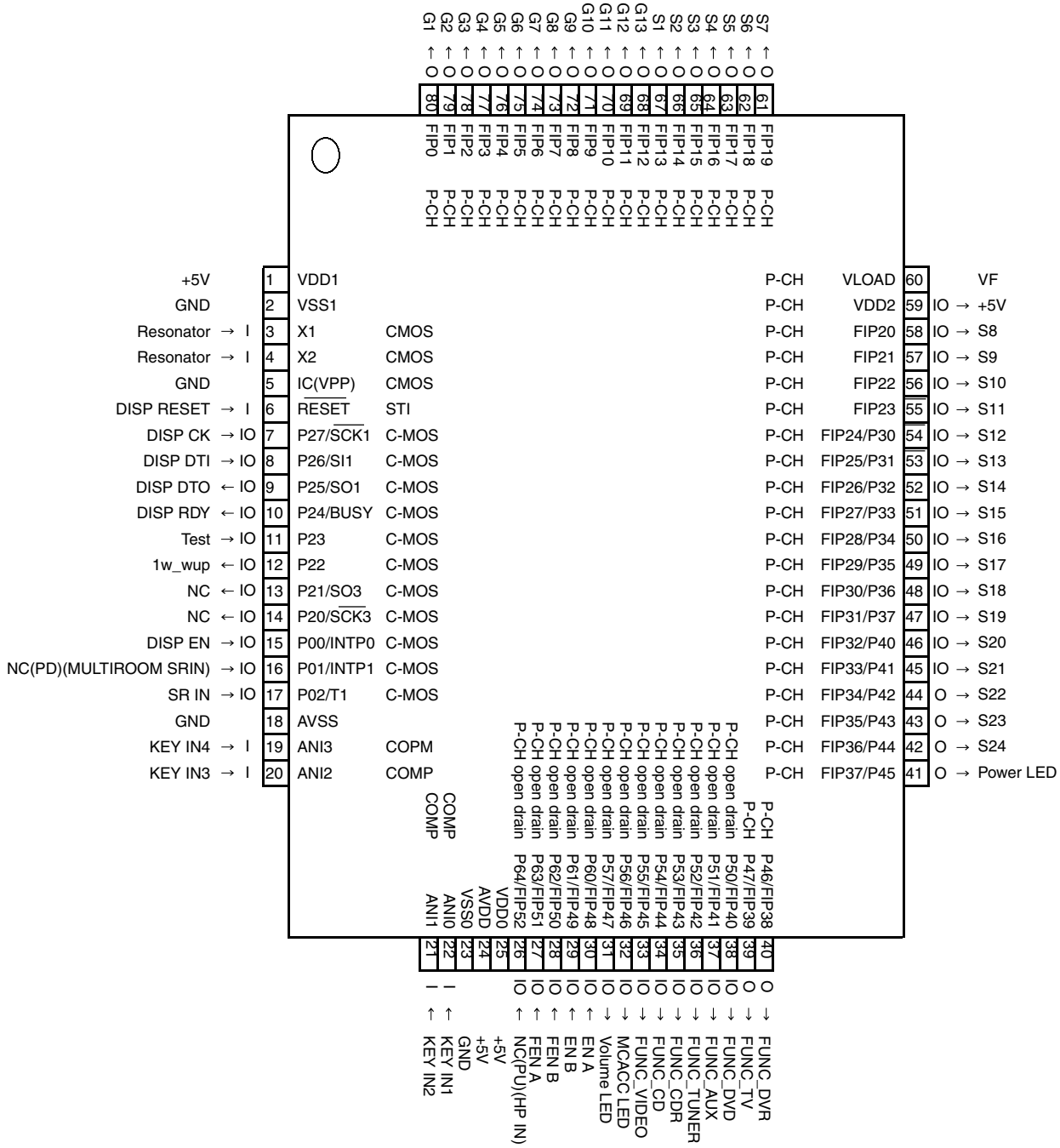
## • Pin Function

| No. | Port | Pin Name | I/O | Pin Function |
|---|---|---|---|---|
| 51 | P43/A19 | INPUT_ATT | I/O | Analog input ATT(H : ATT ON) |
| 52 | P42/A18 | GAIN_SEL | I/O | Gain select (5.1ch and Stereo of analog input : H ) |
| 53 | P41/A17 | AMUTE | I/O | System mute |
| 54 | P40/A16 | RY_B | I/O | Speaker B relay ON/OFF |
| 55 | P37/A15 | RY_C/R | I/O | Rear/Center Speaker relay ON/OFF |
| 56 | P36/A14 | RY_A | I/O | Speaker A relay ON/OFF |
| 57 | P35/A13 | HP DET | I/O | HP detect, H : detected |
| 58 | P34/A12 | RY-AC | I/O | AC relay ON/OFF |
| 59 | P33/A11 | MVRATT | I/O | ATT control of master volume (less than -15dB : L) |
| 60 | P32/A10 | LOW_CONSUMPTION | I/O | If stop mode, port L, else H |
| 61 | P31/A9 | EVR CLK | I/O | Clock signal for Function and E-volume |
| 62 | Vcc | 5V | | |
| 63 | P30/A8(/_/D7) | EVR DT | I/O | Data signal for Function and E-volume |
| 64 | Vss | GND | | |
| 65 | P27/A7(/D7/D6) | NC | I/O | |
| 66 | P26/A6(/D6/D5) | 4053INH | I/O | Component terminal control |
| 67 | P25/A5(/D5/D4) | 4053A | I/O | Component terminal control |
| 68 | P24/A4(/D4/D3) | NC | I/O | |
| 69 | P23/A3(/D3/D2) | SWDET | I/O | SWSP detect |
| 70 | P22/A2(/D2/D1) | VIDEO3 | I/O | SWSP detect |
| 71 | P21/A1(/D1/D0) | VIDEO2 | I/O | SWSP detect |
| 72 | P20/A0(/D0/_) | VIDEO1 | I/O | NJM2296 control (VIDEO input select) |
| 73 | P17/D15/INT5 | OL DET | I/O | Detect overload of AMP |
| 74 | P16/D14/INT4 | NC | I/O | |
| 75 | P15/D13/INT3 | RDS CLK | I/O | Clock input signal for RDS module |
| 76 | P14/D12 RDS | DT | I/O | Data input signal for RDS module |
| 77 | P13/D11 RDS | FM+ | I/O | Power ON/OFF of RDS decoder |
| 78 | P12/D10 | NC | I/O | |
| 79 | P11/D9 | NC | I/O | |
| 80 | P10/D8 | BIAMP | I/O | At the time of BiAMP: L and time of Normal:H |
| 81 | P07/D7 | TUNER DO | I/O | Data input signal for tuner contorol |
| 82 | P06/D6 | TUNER CLK | I/O | Clock signal for tuner contorol |
| 83 | P05/D5 | TUNER DI | I/O | Data output signal for tuner contorol |
| 84 | P04/D4 | TUNER CE | I/O | Chip select signal for tuner contorol |
| 85 | P03/D3 | 6 OHM | I/O | If stop mode, port L, else L/H depends on selection. |
| 86 | P02/D2 | NC | I/O | |
| 87 | P01/D1 | NC | I/O | |
| 88 | P00/D0 | NC | I/O | |
| 89 | P107/AN7/KI3 | NC | I/O | |
| 90 | P106/AN6/KI2 | NC | I/O | |
| 91 | P105/AN5/KI1 | NC | I/O | |
| 92 | P104/AN4/KI0 | NC | I/O | |
| 93 | P103/AN3 | NC | I/O | |
| 94 | P102/AN2 | SIMUKE1 | I/O | Input 1 to switch region |
| 95 | P101/AN1 | SIMUKE2 | I/O | Input 2 to switch region |
| 96 | AVSS | AVSS | | Connect to VSS |
| 97 | P100/AN0 | NC | I/O | |
| 98 | VREF | VREF | | Connect to VCC |
| 99 | AVcc | AVCC | | Connect to VCC |
| 100 | P97/ADTRG/SIN4 | NC | I/O | |

## ■ PE5487A (FRONT DISPLAY ASSY : IC401)

• System Control MCU

### ■ Pin Arrangement (Top View)


1 VDD1 +5V
2 VSS1 GND
3 X1 CMOS Resonator → I
4 X2 CMOS Resonator → I
5 IC(VPP) CMOS GND
6 RESET STI DISP RESET → I
7 P27/SCK1 C-MOS DISP CK → IO
8 P26/SI1 C-MOS DISP DTI → IO
9 P25/SO1 C-MOS DISP DTO ← IO
10 P24/BUSY C-MOS DISP RDY ← IO
11 P23 C-MOS Test → IO
12 P22 C-MOS 1w_wup ← IO
13 P21/SO3 C-MOS NC ← IO
14 P20/SCK3 C-MOS NC ← IO
15 P00/INTP0 C-MOS DISP EN → IO
16 P01/INTP1 C-MOS NC(PD)(MULTIROOM SRIN) → IO
17 P02/T1 C-MOS SR IN → IO
18 AVSS GND
19 ANI3 COPM KEY IN4 → I
20 ANI2 COMP KEY IN3 → I
21 ANI1 I KEY IN2
22 ANI0 I KEY IN1
23 VSS0 GND
24 AVDD +5V
25 VDD0 +5V
26 P64/FIP52 P-CH open drain IO NC(PU)(HP IN)
27 P63/FIP51 P-CH open drain IO FEN A
28 P62/FIP50 P-CH open drain IO FEN B
29 P61/FIP49 P-CH open drain IO EN B
30 P60/FIP48 P-CH open drain IO EN A
31 P57/FIP47 P-CH open drain IO Volume LED
32 P56/FIP46 P-CH open drain IO MCACC LED
33 P55/FIP45 P-CH open drain IO FUNC_VIDEO
34 P54/FIP44 P-CH open drain IO FUNC_CD
35 P53/FIP43 P-CH open drain IO FUNC_CDR
36 P52/FIP42 P-CH open drain IO FUNC_TUNER
37 P51/FIP41 P-CH open drain IO FUNC_AUX
38 P50/FIP40 P-CH open drain IO FUNC_DVD
39 P47/FIP39 P-CH O FUNC_TV
40 P46/FIP38 P-CH O FUNC_DVR
41 FIP37/P45 P-CH O → Power LED
42 FIP36/P44 P-CH O → S24
43 FIP35/P43 P-CH O → S23
44 FIP34/P42 P-CH O → S22
45 FIP33/P41 P-CH IO → S21
46 FIP32/P40 P-CH IO → S20
47 FIP31/P37 P-CH IO → S19
48 FIP30/P36 P-CH IO → S18
49 FIP29/P35 P-CH IO → S17
50 FIP28/P34 P-CH IO → S16
51 FIP27/P33 P-CH IO → S15
52 FIP26/P32 P-CH IO → S14
53 FIP25/P31 P-CH IO → S13
54 FIP24/P30 P-CH IO → S12
55 FIP23 P-CH IO → S11
56 FIP22 P-CH IO → S10
57 FIP21 P-CH IO → S9
58 FIP20 P-CH IO → S8
59 VDD2 P-CH IO → +5V
60 VLOAD P-CH VF
61 FIP19 P-CH O G1
62 FIP18 P-CH O G2
63 FIP17 P-CH O G3
64 FIP16 P-CH O G4
65 FIP15 P-CH O G5
66 FIP14 P-CH O G6
67 FIP13 P-CH O G7
68 FIP12 P-CH O G8
69 FIP11 P-CH O G9
70 FIP10 P-CH O G10
71 FIP9 P-CH O G11
72 FIP8 P-CH O G12
73 FIP7 P-CH O G13
74 FIP6 P-CH O S1
75 FIP5 P-CH O S2
76 FIP4 P-CH O S3
77 FIP3 P-CH O S4
78 FIP2 P-CH O S5
79 FIP1 P-CH O S6
80 FIP0 P-CH O S7

## • Pin Function

| No. | Port | Pin Name | I/O | Pin Function |
|---|---|---|---|---|
| 1 | VDD1 | +5V | - | positive power supply |
| 2 | VSS1 | GND | - | ground potential |
| 3 | X1 | Resonator | I | crystal connection for system clock oscillation |
| 4 | X2 | Resonator | - | crystal connection for system clock oscillation |
| 5 | IC(VPP) | GND | - | |
| 6 | RESET | DISP RESET | I | receive reset signal from main u-com |
| 7 | P27/SCK1 | DISP CK | I/O | clock signal from main u-com |
| 8 | P26/SI1 | DISP DTI | I/O | datain from main u-com |
| 9 | P25/SO1 | DISP DTO | I/O | data out to main u-com |
| 10 | P24/BUSY | DISP RDY | I/O | ready signal from main u-com |
| 11 | P23 | Test | I/O | test mode input for checker |
| 12 | P22 | 1w_wup | I/O | output wakeup signal to main u-com |
| 13 | P21/SO3 | NC | I/O | |
| 14 | P20/SCK3 | NC | I/O | |
| 15 | P00/INTP0 | DISP EN | I/O | enable signal from main u-com |
| 16 | P01/INTP1 | NC | I/O | |
| 17 | P02/T1 | SR IN | I/O | remote control signal input from main room |
| 18 | AVSS | GND | - | ground potential for A/D converter |
| 19 | ANI3 | KEY IN4 | I | |
| 20 | ANI2 | KEY IN3 | I | |
| 21 | ANI1 | KEY IN2 | I | |
| 22 | ANI0 | KEY IN1 | I | |
| 23 | VSS0 | GND | - | ground potential for ports |
| 24 | AVDD | +5V | - | analog power voltage input to A/D converter |
| 25 | VDD0 | +5V | - | positive power supply to ports |
| 26 | P64/FIP52 | NC | I/O | |
| 27 | P63/FIP51 | FEN A | I/O | MULTI JOG(Right) |
| 28 | P62/FIP50 | FEN B | I/O | MULTI JOG(Left) |
| 29 | P61/FIP49 | EN B | I/O | VOLUME JOG1(-) |
| 30 | P60/FIP48 | EN A | I/O | VOLUME JOG1(+) |
| 31 | P57/FIP47 | VOLUME LED | I/O | VOLUME LED Output |
| 32 | P56/FIP46 | MCACC LED | I/O | MCACC LED Output |
| 33 | P55/FIP45 | FUNC_VIDEO | I/O | FUNCLED Output |
| 34 | P54/FIP44 | FUNC_CD | I/O | FUNCLED Output |
| 35 | P53/FIP43 | FUNC_CDR | I/O | FUNCLED Output |
| 36 | P52/FIP42 | FUNC_TUNER | I/O | FUNCLED Output |
| 37 | P51/FIP41 | FUNC_AUX | I/O | FUNCLED Output |
| 38 | P50/FIP40 | FUNC_DVD | I/O | FUNCLED Output |
| 39 | P47/FIP39 | FUNC_TV | O | FUNCLED Output |
| 40 | P46/FIP38 | FUNC_DVR | O | FUNCLED Output |

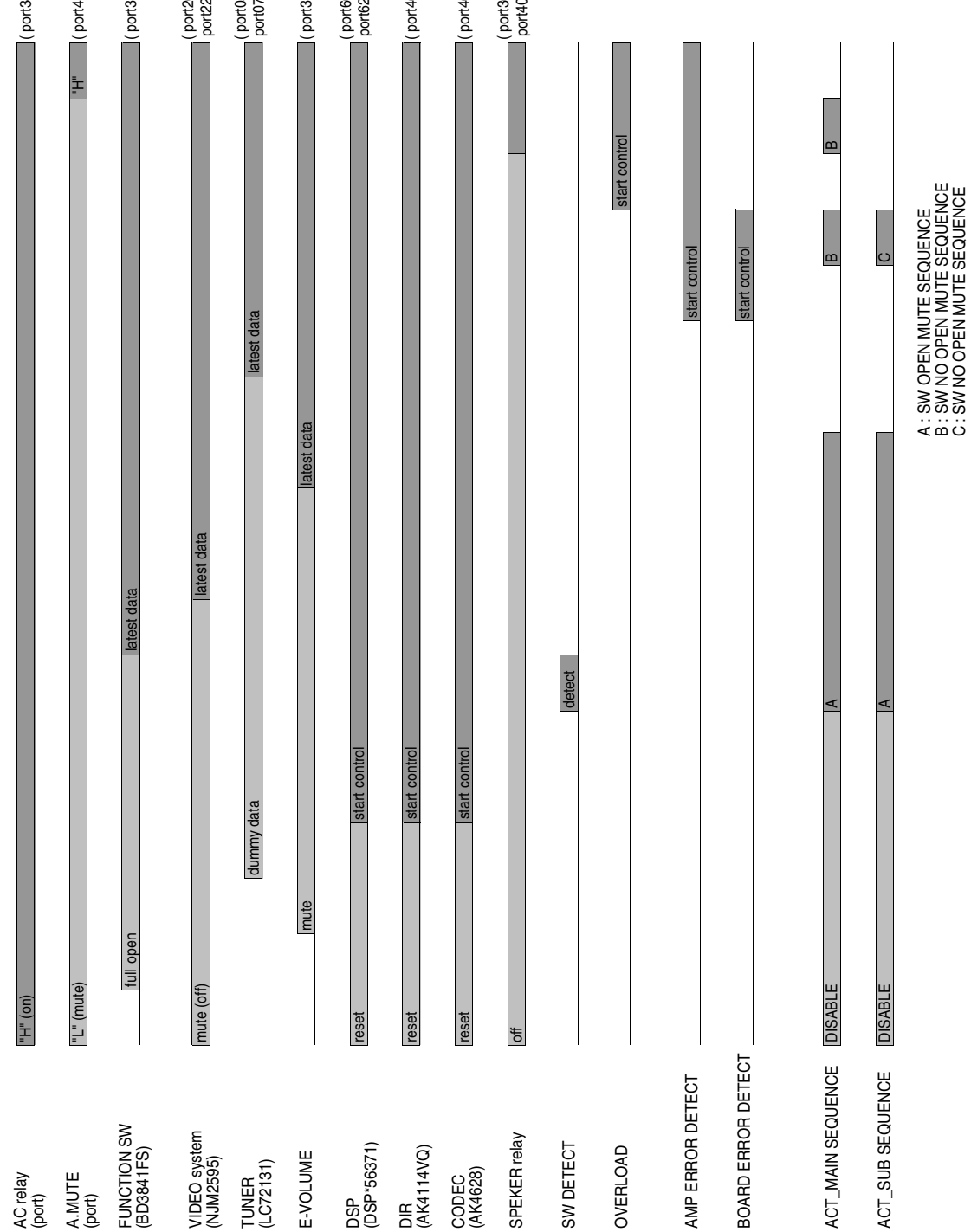
• **Pin Function**

| No. | Port | Pin Name | I/O | Pin Function |
|---|---|---|---|---|
| 41 | FIP37/P45 | POWER LED | O | Power On LED Output |
| 42 | FIP36/P44 | S24 | O | Display |
| 42 | FIP35/P43 | S23 | O | Display |
| 44 | FIP34/P42 | S22 | O | Display |
| 45 | FIP33/P41 | S21 | O | Display |
| 46 | FIP32/P40 | S20 | O | Display |
| 47 | FIP31/P37 | S19 | O | Display |
| 48 | FIP30/P36 | S18 | O | Display |
| 49 | FIP29/P35 | S17 | O | Display |
| 50 | FIP28/P34 | S16 | O | Display |
| 51 | FIP27/P33 | S15 | O | Display |
| 52 | FIP26/P32 | S14 | O | Display |
| 53 | FIP25/P31 | S13 | O | Display |
| 54 | FIP24/P30 | S12 | O | Display |
| 55 | FIP23 | S11 | O | Display |
| 56 | FIP22 | S10 | O | Display |
| 57 | FIP21 | S9 | O | Display |
| 58 | FIP20 | S8 | O | Display |
| 59 | VDD2 | +5V | - | positive power supply to FIP controller. |
| 60 | VLOAD | VF | - | pull down resistor connection of FIP controller |
| 61 | FIP19 | S7 | O | Display |
| 62 | FIP18 | S6 | O | Display |
| 63 | FIP17 | S5 | O | Display |
| 64 | FIP16 | S4 | O | Display |
| 65 | FIP15 | S3 | O | Display |
| 66 | FIP14 | S2 | O | Display |
| 67 | FIP13 | S1 | O | Display |
| 68 | FIP12 | G13 | O | Display |
| 69 | FIP11 | G12 | O | Display |
| 70 | FIP10 | G11 | O | Display |
| 71 | FIP9 | G10 | O | Display |
| 72 | FIP8 | G9 | O | Display |
| 73 | FIP7 | G8 | O | Display |
| 74 | FIP6 | G7 | O | Display |
| 75 | FIP5 | G6 | O | Display |
| 76 | FIP4 | G5 | O | Display |
| 77 | FIP3 | G4 | O | Display |
| 78 | FIP2 | G3 | O | Display |
| 79 | FIP1 | G2 | O | Display |
| 80 | FIP0 | G1 | O | Display |

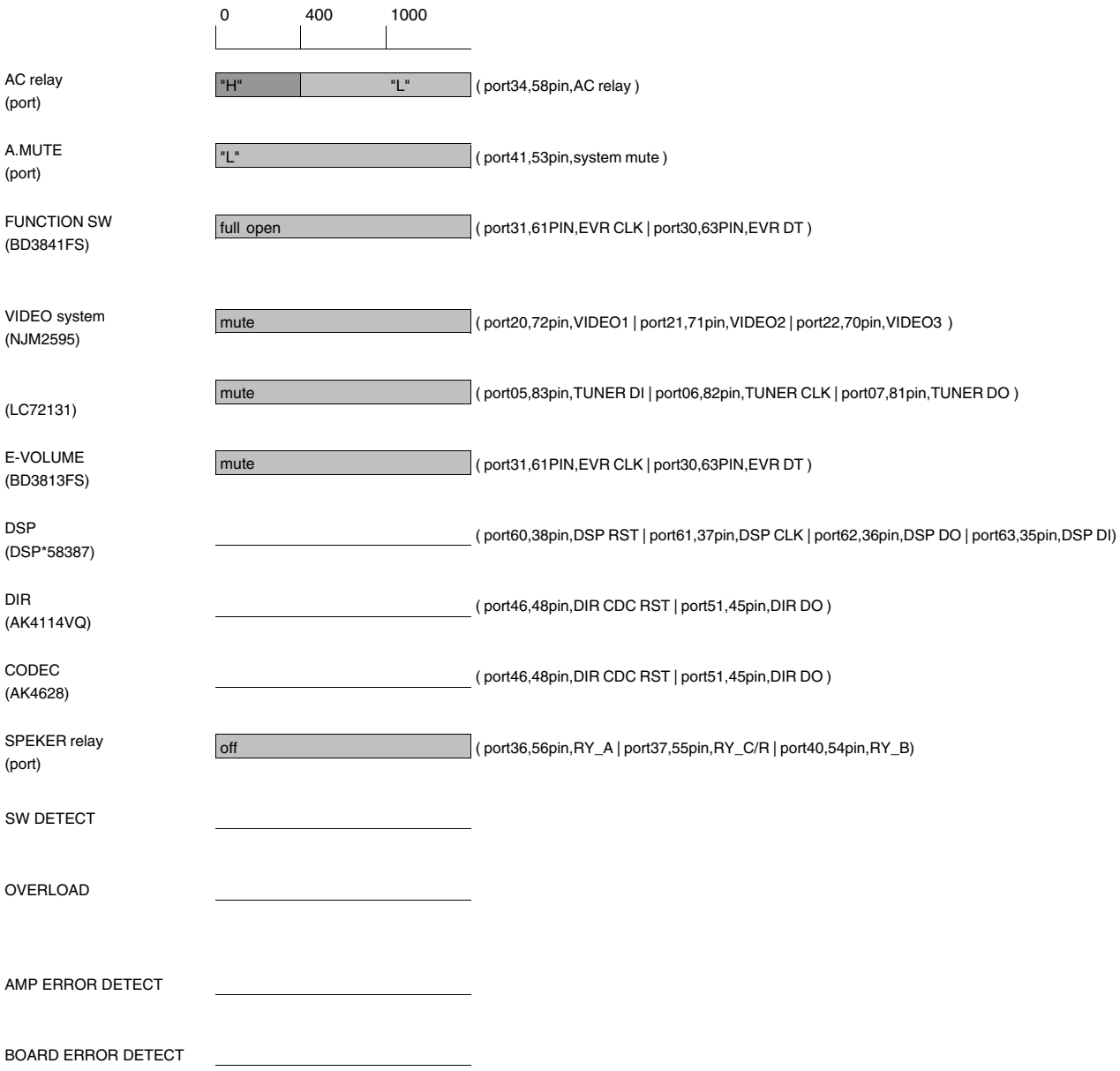
# 7.3 EXPLANATION

## 7.3.1 POWER ON AND OFF INITIAL TIMING CHART

### ■ POWER ON INITIAL TIMING CHART

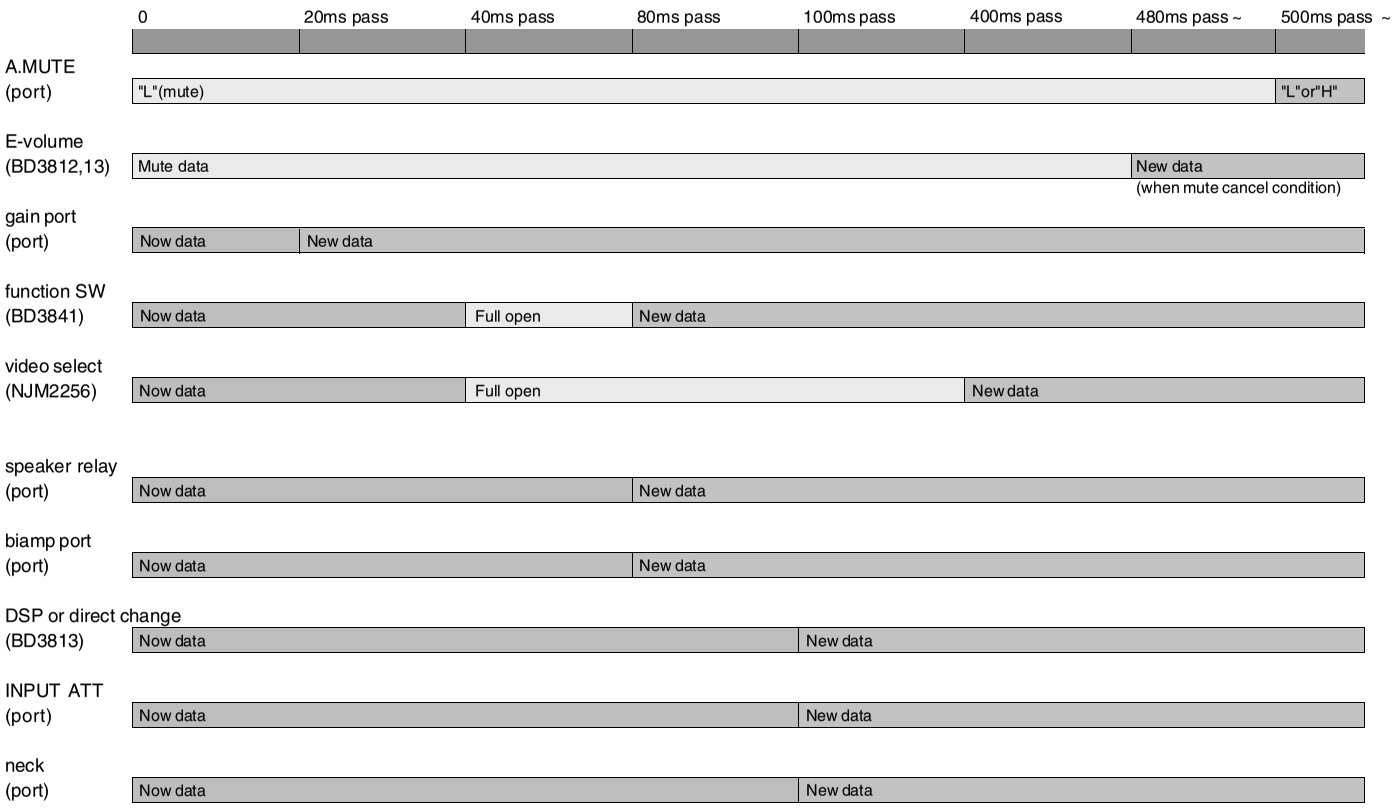


## ■ POWER OFF INITIAL TIMING CHART



## ■ IC data transmission timing chart

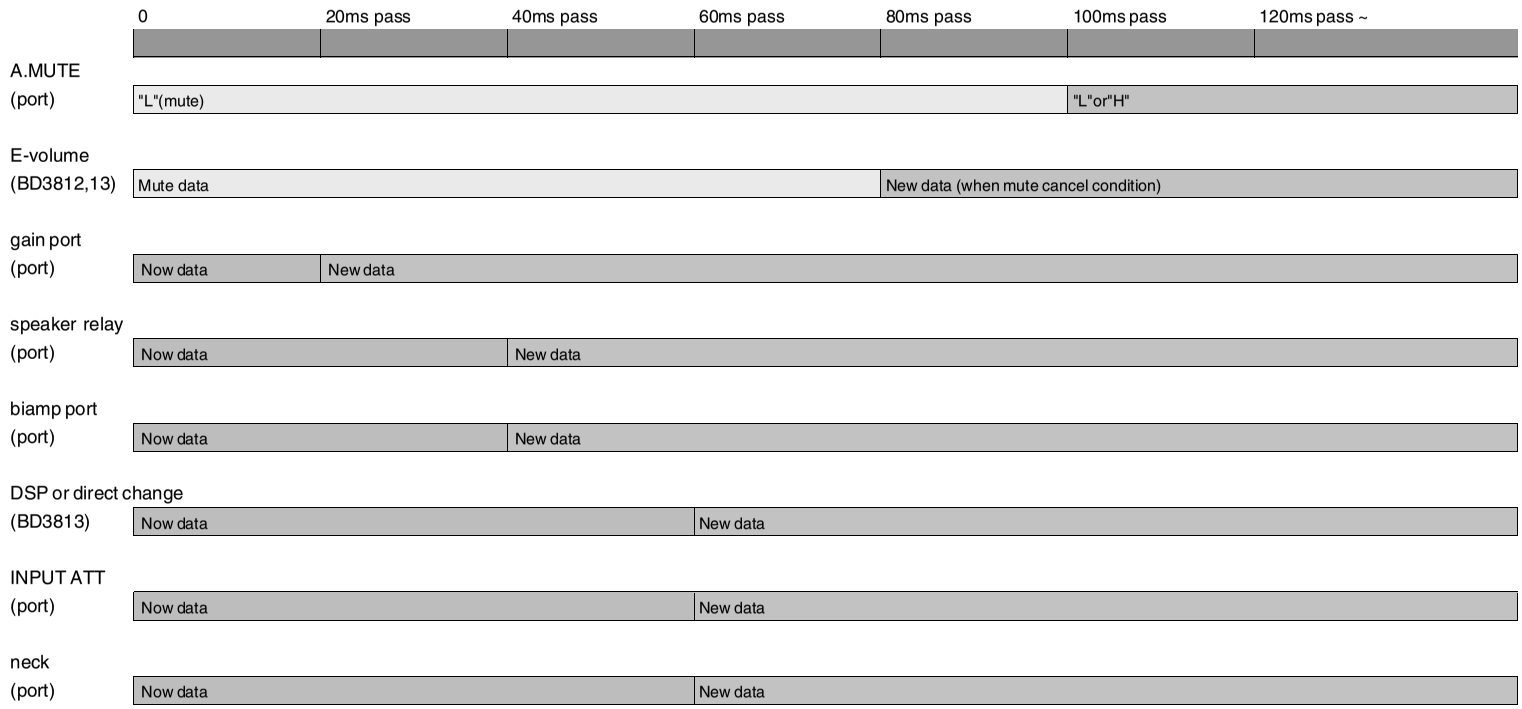
1.When function chage




condition of mute cancel (system mute & E-volume mute)

1) when tuner mute during Tuner function
2) when communicate to DSP
3) when initial processing
4) when detect trouble of AMP DC
5) when detect overload of AMP
6) when Power off
7) when muting by key input

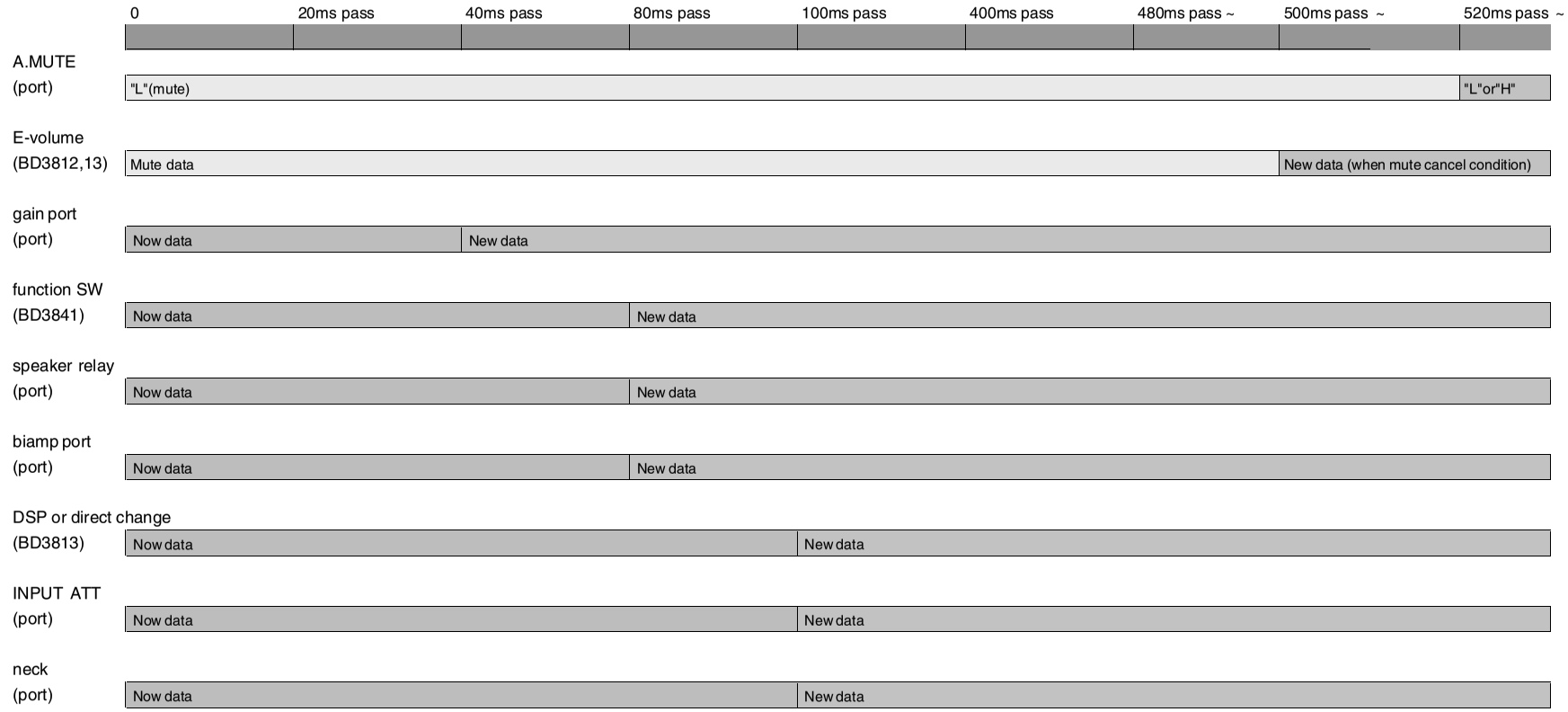
2.When except function chage




condition of mute cancel (system mute & E-volume mute)

1) when tuner mute during Tuner function
2) when communicate to DSP
3) when initial processing
4) when detect trouble of AMP DC
5) when detect overload of AMP
6) when Power off
7) when muting by key input

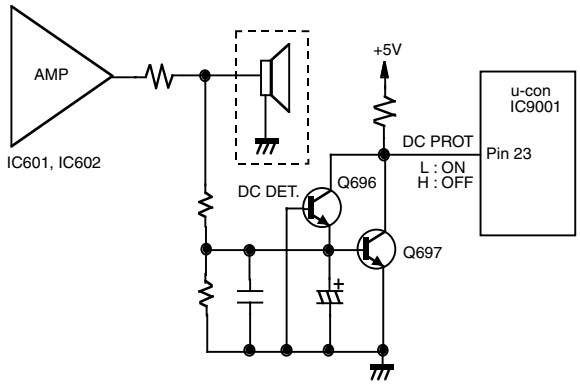
3.When except function chage(case 2)



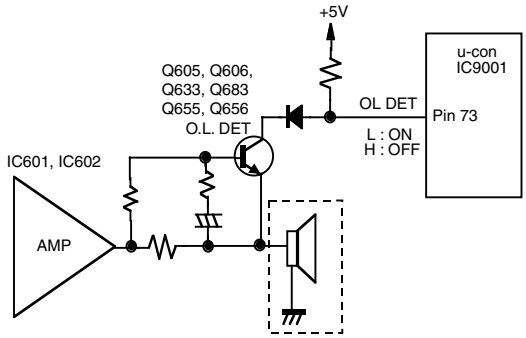

(1) When standard mode change.
(2) When listening mode change.
(3) When surround back ch chenge.
(4) When "dolby_set_with_mete" function call.

## 7.3.3 DETECTION CIRCUIT

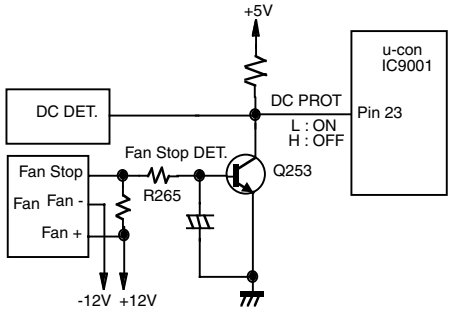
1.DC Detection Circuit Diagram:



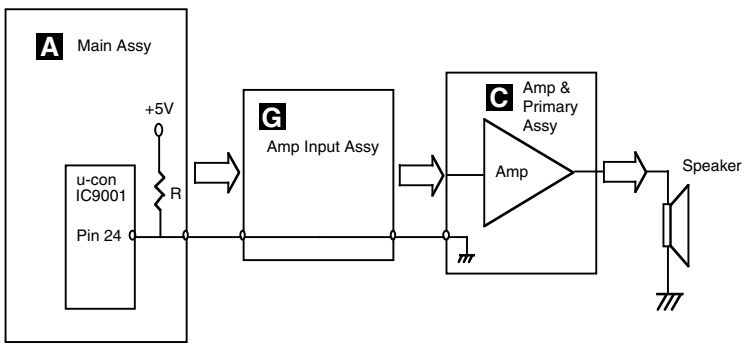

2. Overload Detection Circuit Diagram:




3. Fan Stop Prottection Circuit Diagram:




4. PCB Board Protection Circuit Diagram



## 7.3.4 AMPLIFIER SYSTEM PROTECTION OPERATION SPECIFICATION

**1. DC-abnormality detection**

DC detection is only enabled 2 seconds after power-on.
If there is a fault in the power amplifier or a high-level signal lower than 5 Hz is input, the DC_DET port becomes “L”.
If the “L” is detected, the microprocessor will perform as following flow chart.

In the case of simultaneous detection with the overload protection circuit, DC-abnormality detection is performed preferentially to overload detection.

When a DC abnormality is detected, A.MUTE* is turned on, speaker relay is turned off, then "AMP_ERR" flashes on the display.

*A.MUTE : Audio mute command

↓

The abnormality continues for 3 seconds.

↓ Continues.

The power is shut off.

↓

Power key not effective.

↓ Recovery

The program restarts.

However, when the following keys are pushed so that the key input of a line and the service can be carried out, power can be on. (If don't push these key, need to wait 1 min then power can be on again.)
① TESTMODE ON (A55F+A55F)
② When power off, push FRONT ENTER key + ADVANCED SURROUND key continuously 2sec.
(②: When a DC abnormality is detected and the power is shut off.)

**2. Overload detection**

If the speaker terminals are short-circuited or low-load driving is detected, the OL_DET port becomes “L”.
If the “L” is detected, the microprocessor will perform as following flow chart.

When an overload is detected, A.MUTE* is turned on, speaker relay is turned off, then "OVERLOAD" flashes on the display.

↓

The abnormality continues for 3 seconds.

↓ Continues.

The power is shut off.

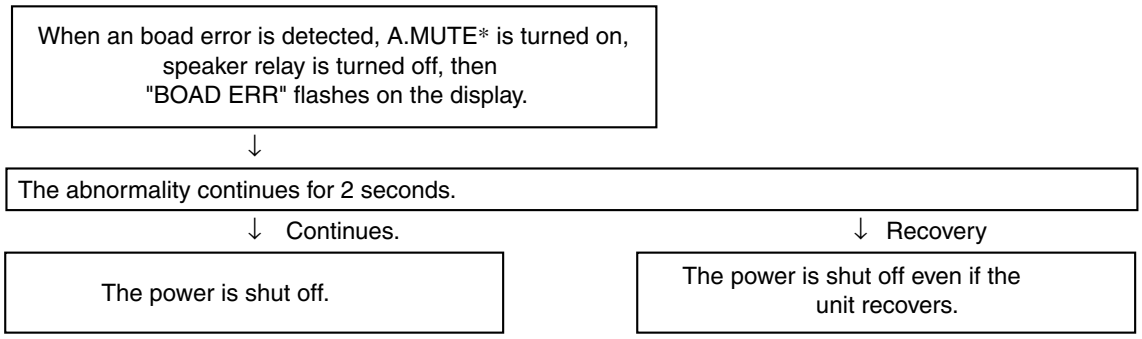
↓ Recovery

The power is shut off even if the unit recovers.

### 3. Board detection

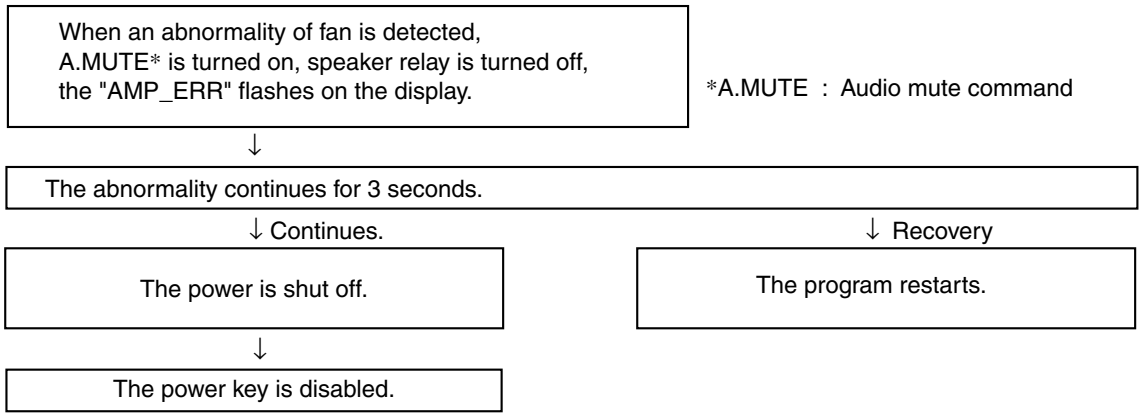
If the board connection from Main Ass'y to Amp&Primary Ass'y is interrupted,
the BOARD_DET port becomes "H".
If the "H" is detected, the microprocessor will perform as following flow chart.

In the case of simultaneous detection with the overload protection circuit,
Board detection is performed preferentially to DC-abnormality detection and Overload detection.


When an boad error is detected, A.MUTE* is turned on,
speaker relay is turned off, then
"BOAD ERR" flashes on the display.
The abnormality continues for 2 seconds.
Continues.
Recovery
The power is shut off.
The power is shut off even if the
unit recovers.

### 4. Fan stop detection operation flow in the DC abnormality detection

If the fan is forcibly stopped, the 'DC PROT' port becomes "L". Then an abnormality of fan is detected.


When an abnormality of fan is detected,
A.MUTE* is turned on, speaker relay is turned off,
the "AMP_ERR" flashes on the display.
*A.MUTE : Audio mute command
The abnormality continues for 3 seconds.
Continues.
Recovery
The power is shut off.
The program restarts.
The power key is disabled.

However, when the following keys are pushed so that the key input of a line and the service can be carried out, power can be on.

① TESTMODE ON (A55F+A55F)
② When power off, push FRONT ENTER key + ADVANCED SURROUND key continuously 2sec.
(Effective, only when power-off is carried out by DC detection)

## 7.3.5 AMPLIFIER FAILURE DIAGNOSIS FLOW CHART

■ **Amplifier failure diagnosis flow chart**

A

When DC detection is activated ("AMP_ERR" flashes on the display), failure (damage) of the power amplifier section is considered.
As DC detection and fan stop protection circuits commonly use same abnormality detection port in microprocessor, please make sure that the operation of fan motor is in normal condition before proceeding to the troubleshooting of amplifier.

**Caution:**
When release the lock state of power key before repair, please be careful because there is the possibility that more damages will occur when turns on the power once again!

B

• According to a symptom, perform the following confirmation beforehand.

1) Is the operation of fan motor in normal condition?

2) Are there any Fuses and IC protectors open?

3) After turn on the power, confirm that the supply voltage of the point that can be measured is appropriate.

C

4) Whether the voltage of pin3 of IC601 or IC602 is equal to (VL-0.7V). If not (eg, equal to VH), then change the corresponding power pack IC601 or IC602.

5) Furthermore, check the output DC voltage of each channel of power pack IC601 and IC602 to limit the failure channel and identify the defect power pack.

• After identify the failure channel, check that each part is not damaged (resistor, diode... etc. value / open / short)

D

## 7.4 CLEANING

E

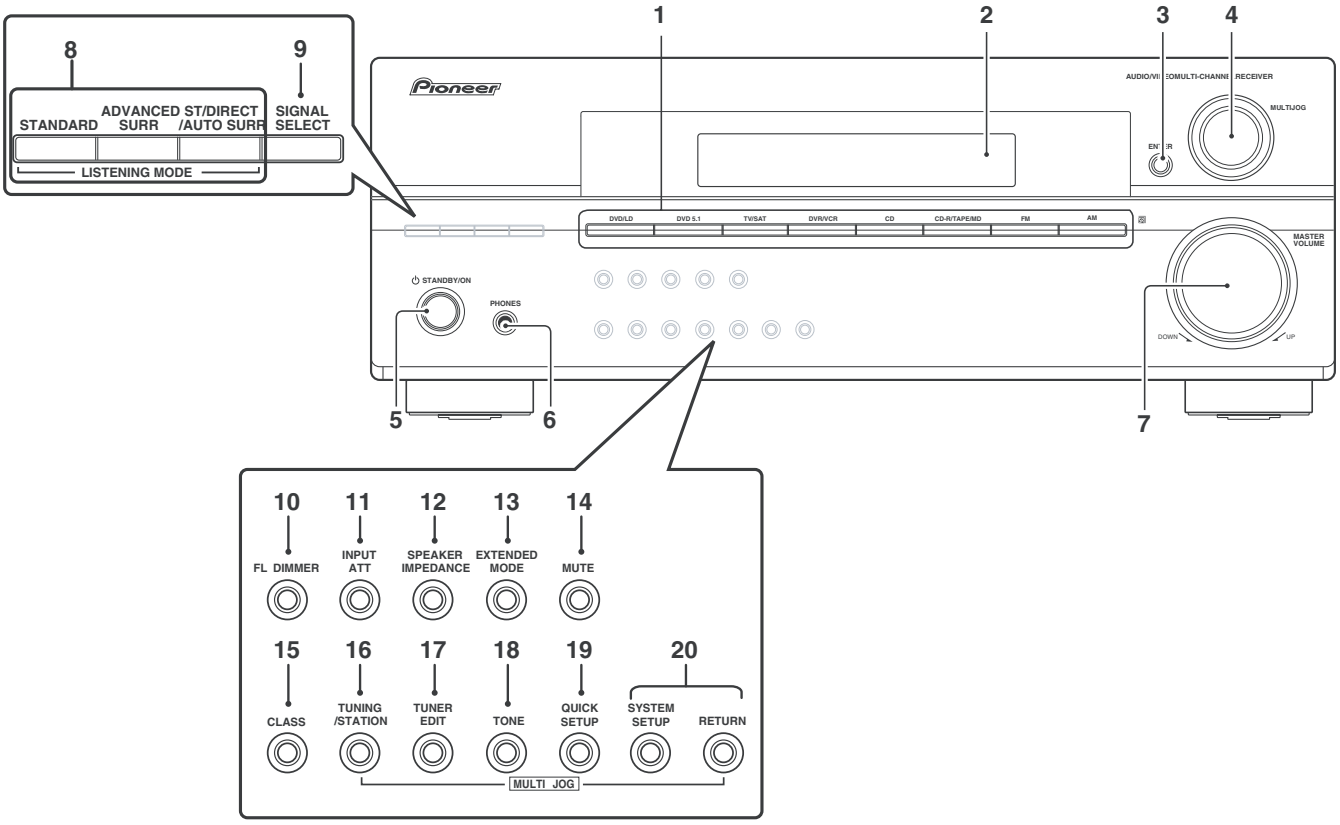
Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

| Position to be cleaned | Cleaning tools |
|---|---|
| Fans | Cleaning paper : GED-008 |

F

# 8. PANEL FACILITIES

## Front panel




**1 Input select buttons**
Press to select an input source.

**2 Character display**
See Display.

**3 ENTER**

**4 MULTI JOG dial**
The **MULTI JOG** dial performs a number of tasks. Use it to select options after pressing the designated **MULTI JOG** buttons.

**5 ⏻ STANDBY/ON**
Switches the receiver between on and standby.

**6 PHONES jack**
Use to connect headphones. When the headphones are connected, there is no sound output from the speakers.

**7 MASTER VOLUME**

**8 LISTENING MODE buttons**

**STANDARD**
Press for Standard decoding and to switch between the various Pro Logic II and Neo:6 options.

**ADVANCED SURROUND**
Use to switch between the various surround modes.

**STEREO/DIRECT (AUTO SURR)**
Switches between direct and stereo playback. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

Selects the Auto Surround mode.

**9 SIGNAL SELECT**
Use to select an input signal.

**10 FL DIMMER**
Dims or brightens the display.

**11 INPUT ATT**
Attenuates (lowers) the level of an analog input signal to prevent distortion.

**12 SPEAKER IMPEDANCE**
Use to change the impedance setting

**13 EXTENDED MODE**
Selects a surround back channel option or (when the surround back speakers are not available) the Virtual Surround Back (VSB) mode.

**14 MUTE**
Mutes the sound (or restores the sound if it has been muted).

**15 CLASS**
Switches between the three banks (classes) of station presets.

**16 TUNING / STATION buttons**
Selects the frequency and station presets when using the tuner.

**17 TUNER EDIT**
Press to memorize and name a station for recall.

**18 TONE**
Press this button to access the bass and treble controls, which you can then adjust with the **MULTI JOG** dial.

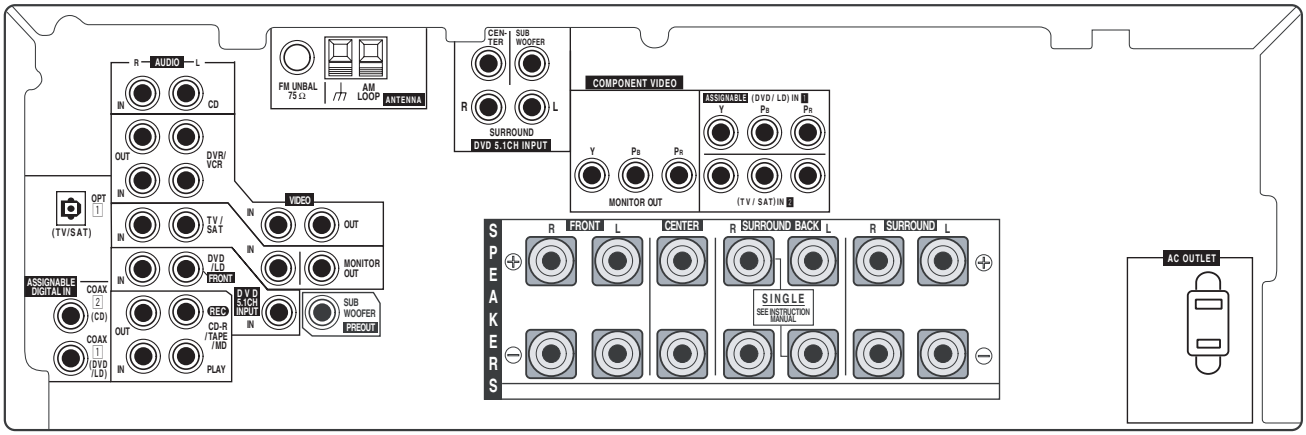
**19 QUICK SETUP**
See Using the Quick Setup.

**20 System Setup menu controls**

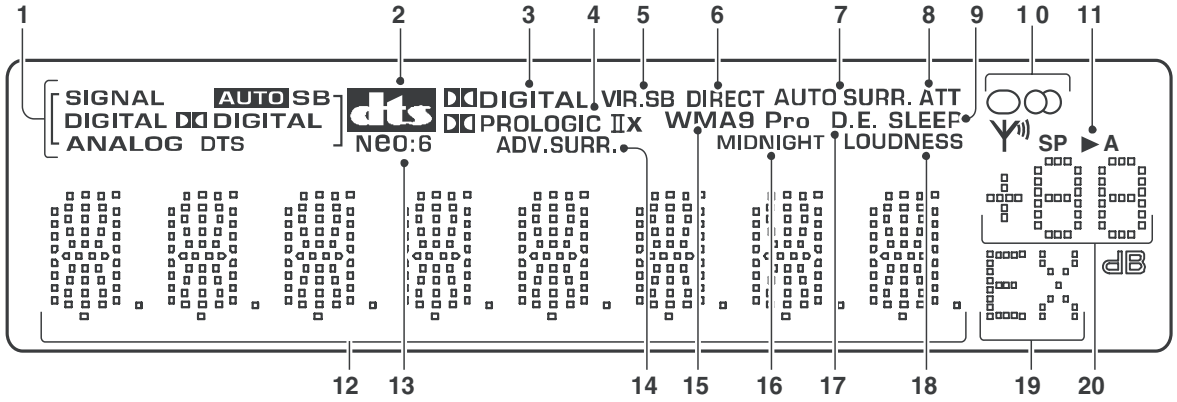
**SYSTEM SETUP**
Use with the **MULTI JOG** dial to access the System Setup menu.

**RETURN**
Press to confirm and exit the current menu screen.

## Rear panel



# Display




**1 SIGNAL SELECT indicators**

Lights to indicate the type of input signal assigned for the current component:

**AUTO**

Lights when **AUTO** signal select is on.

**SB**

Depending on the source, this lights when a signal with surround back channel encoding is detected.

**DIGITAL**

Lights when a digital audio signal is detected.

**DIGITAL**

Lights when a Dolby Digital encoded signal is detected.

**ANALOG**

Lights when an analog signal is detected.

**DTS**

Lights when a source with DTS encoded audio signals is detected.

**2** dts

When the **STANDARD** mode of the receiver is on, this lights to indicate decoding of a DTS multichannel signal.

**3 DIGITAL**

When the **STANDARD** mode of the receiver is on, this lights to indicate decoding of a Dolby Digital multichannel signal.

**4 PRO LOGIC II x**

When the (**STANDARD**) Pro Logic II mode of the receiver is on, **PRO LOGIC II** lights to indicate Pro Logic II decoding.

**PRO LOGIC II x** lights to indicate Pro Logic IIx decoding (see Listening in surround sound for more on this).

**5 VIR.SB**

Lights during Virtual surround back processing.

**6 DIRECT**

Lights when source direct playback is in use. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

**7 AUTO SURR.**

Lights when the Auto Surround feature is switched on.

**8 ATT**

Lights when **INPUT ATT** is used to attenuate (reduce) the level of the analog input signal.

**9 SLEEP**

Lights when the receiver is in sleep mode.

**10 Tuner indicators**

**/ MONO**

Lights when the mono mode is set using the **MPX** button.

**/ STEREO**

Lights when a stereo FM broadcast is being received in auto stereo mode.

**/ TUNED**

Lights when a broadcast is being received.

**11 Speaker indicator**

Shows if the speaker system is on or not. **SP▶A** means the speakers are switched on. **SP▶** means the headphones are connected.

**12 Character display**

**13 Neo:6**

When the (**STANDARD**) Neo:6 mode of the receiver is on, this lights to indicate Neo:6 processing.

**14 ADV.SURR. (Advanced Surround)**

Lights when one of the Advanced Surround modes has been selected.

**15 WMA9 Pro**

Lights to indicate decoding of a WMA9 Pro signal.

**16 MIDNIGHT**

Lights during Midnight listening.

**17 D.E.**

Lights when Dialog Enhancement (**DIALOG E**) is switched on.

**18 LOUDNESS**

Lights during Loudness listening.

**19 EX**

Lights when a Dolby Digital Surround EX encoded signal is detected.

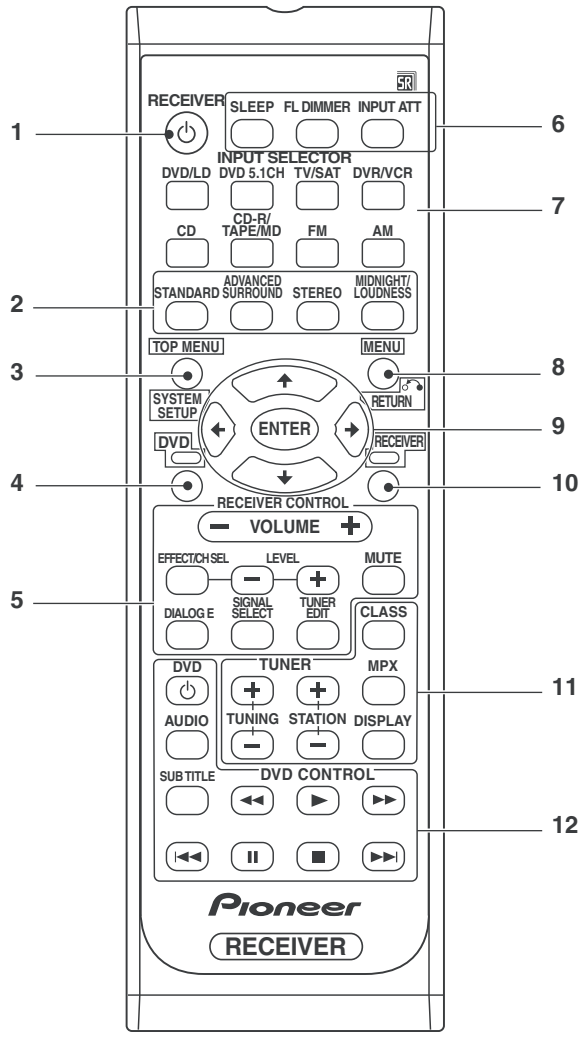
**20 Master volume level**

Shows the overall volume level. **---dB** indicates the minimum level, and **- 0 dB** indicates the maximum level.

Depending on your level settings for each channel, the maximum volume can range between –10 dB and –0 dB.

# Remote control

Illustration shows the VSX-515 remote control




**1 RECEIVER⏻**

Switches the receiver between standby and on.

**2 Listening mode buttons**

**STANDARD**
Press for Standard decoding and to switch between the various Pro Logic II and Neo:6 options.

**ADVANCED SURROUND**
Use to switch between the various surround modes.

**STEREO**
Switches between direct and stereo playback. Direct playback bypasses the tone controls and channel levels for the most accurate reproduction of a source.

Selects the Auto Surround mode.

**MIDNIGHT/LOUDNESS**
Switches to Midnight or Loudness listening.

**3 TOP MENU**

Displays the disc 'top' menu of a DVD.

**SYSTEM SETUP**
Press to access the System Setup menu.

**4 DVD**

Press to use the DVD controls on the remote.

**5 RECEIVER CONTROL buttons**

**VOLUME +/–**
Use to set the listening volume.

**MUTE**
Mutes/unmutes the sound.

**EFFECT/CH SEL**
Press repeatedly to select a channel, then use **LEVEL +/–** to adjust the level. Also adjusts the level of the Advanced Surround effects as well as Dolby Pro Logic IIx Music and Neo:6 Music parameters. You can then use the **LEVEL +/–** buttons to make these adjustments.

**LEVEL +/–**
Use to adjust the effect and channel levels, as well as to change Dolby Pro Logic IIx and Neo:6 Music parameter settings.

**DIALOG E**
Use to make dialog stand out when watching TV or a movie.

**SIGNAL SELECT**
Use to select an input signal.

**TUNER EDIT**
Press to memorize and name a station for recall.

**6 SLEEP**
Use to set the sleep timer.

**FL DIMMER**
Dims or brightens the display.

**INPUT ATT**
Attenuates (lowers) the level of an analog input signal to prevent distortion.

**7 INPUT SELECTOR buttons**
Press to select an input source.

**8 MENU**
Displays the disc menu of DVD-Video discs. It also displays TV menus.

**RETURN**
Confirm and exit the current menu screen.

**9 ↑↓←→/ENTER**
Use the arrow buttons when setting up your surround sound system.
Also used for DVD menus.

**10 RECEIVER**
Use to switch to the receiver controls on the remote control. Also used when setting up the surround sound for the receiver.

**11 TUNER controls**
The **TUNING +/–** buttons can be used to find radio frequencies and the **STATION +/–** buttons can be used to select preset radio stations.

**CLASS**
Switches between the three banks (classes) of station presets.

**MPX**
Use to switch between auto stereo and mono reception of FM broadcasts. If the signal is weak then switching to mono will improve the sound quality.

**DISPLAY**
Switch the display between station preset name and frequency.

**12 DVD CONTROL buttons**
You can use these buttons to control a Pioneer DVD player connected to your system.

| Button | What it does |
|---|---|
| **DVD**⏻ | Turns DVD power on/off. |
| **AUDIO** | Changes the audio language or channel. |
| **SUBTITLE** | Displays/changes the subtitles on multilingual DVD-Video discs. |
| ► | Starts/resumes normal playback. |
| II | Pauses/unpauses a disc. |
| ■ | Stops playback. |
| ◄◄ | Press to start fast reverse scanning. |
| ►► | Press to start fast forward scanning. |
| I◄◄ | Skips to the start of the current track or chapter, then previous tracks/chapters. |
| ►►I | Skips to the next track or chapter. |

## Operating range of remote control unit

The remote control may not work properly if:

- There are obstacles between the remote control and the receiver's remote sensor.
- Direct sunlight or fluorescent light is shining onto the remote sensor.
- The receiver is located near a device that is emitting infrared rays.
- The receiver is operated simultaneously with another infrared remote control unit.